Vacuum Products Series

MAGNOX

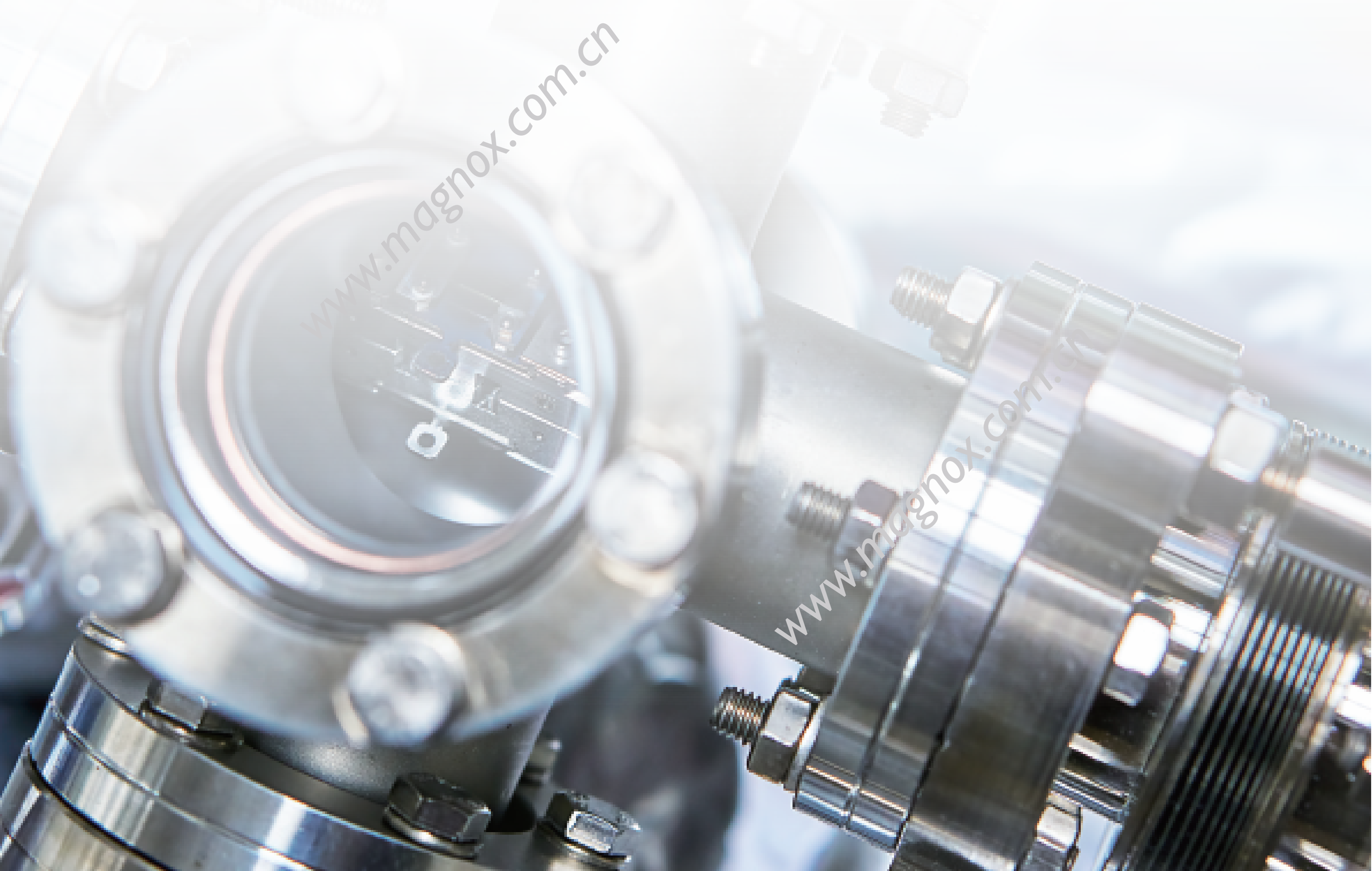
OUR PEOPLE MAKE THE DIFFERENCE

公司简介

苏州迈格诺科洁净材料有限公司成立于2012年，专业从事基于超纯不锈钢为母材的各类超高洁净系统和精密零部件的设计、加工、制造及销售业务。公司致力于为客户提供高质量并具成本效益的各类标准件和客制化产品的优质全程供应链管理服务。

我们拥有完整的机械加工及TIG焊接生产线：有通过第三方验证，可满足半导体超纯气体管路焊接、清洗、测试、包装环境的100及10K级洁净室；拥有国际一线品牌的各类检测设备。公司已取得ISO9001认证，团队拥有从设计、工艺、制造加工、质量与制程控制的整套专业能力。人员技术过硬、经验丰富，在业界拥有良好的信誉与口碑。

迈格诺科坚持以客户为导向，广泛服务于生物制药、食品饮料、精密化工、太阳能光伏、半导体芯片、平板显示以及科研、军工、航空航天等产业的客户。凭借多年的专业经验，我们了解这些行业的严格要求并拥有成熟的解决方案。例如系统的洁净度控制、焊接产品的精度控制等。我们会在客户的严格要求下，提供最优的解决方案以实现客户目标。



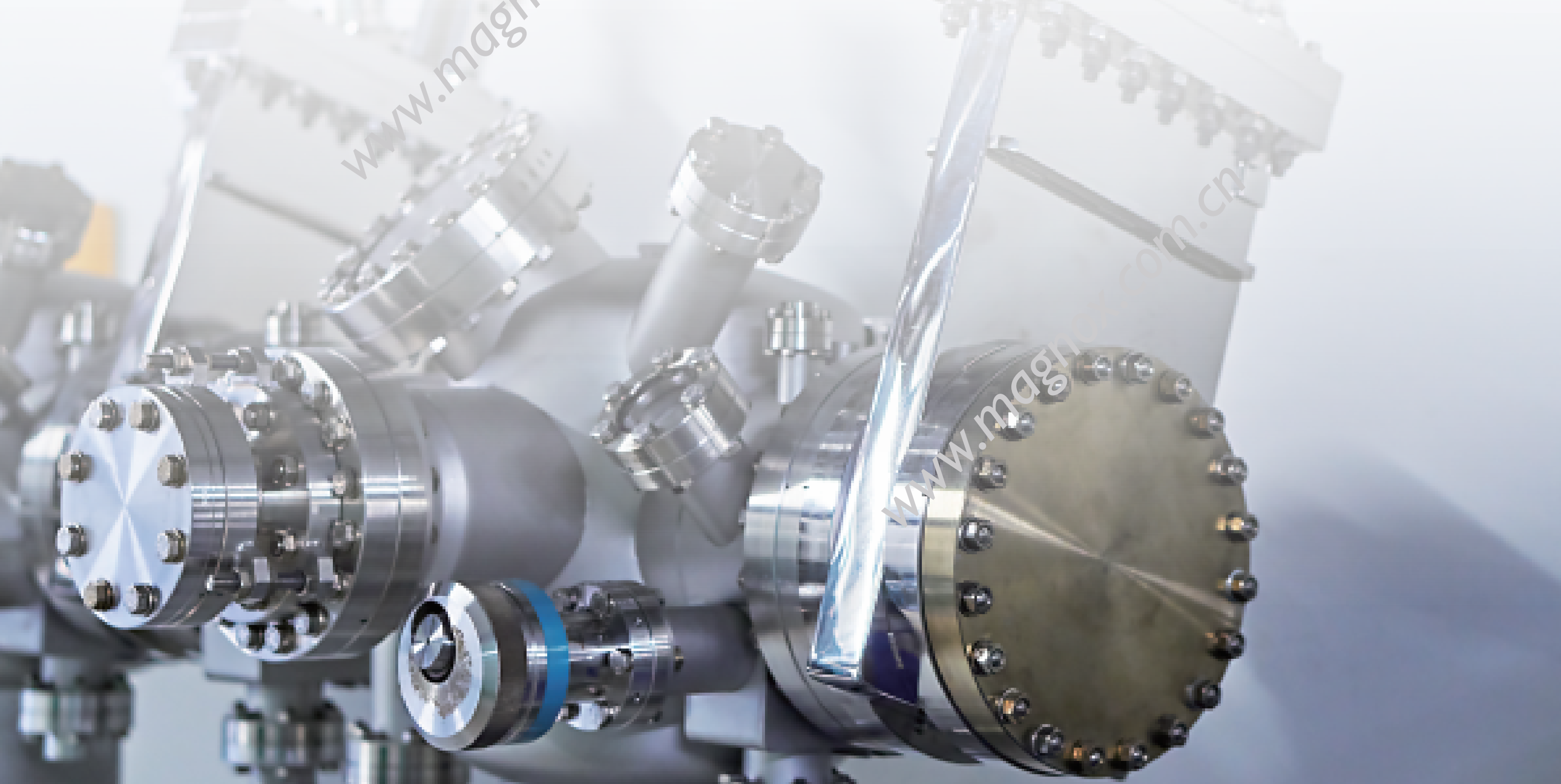
INTRODUCTION

Founded in 2012, Suzhou Magnox Hygienic Materials Co, Ltd.is specialized in design, processing, manufacturing and sales of various ultra-high cleaning systems and precision parts based on ultra pure stainless steel. The company is committed to providing high-quality and cost-effective supply chain management services for all kinds of standard parts and customized products.

We have a complete machining and TIG welding production line;There are 100 and 10K clean rooms that have passed the CNAS Certification and can meet the requirements of semiconductor ultra pure gas pipeline welding, cleaning, testing and packaging environment;We also international first-line brand testing equipments.

The company has passed 1S09001 certification.The team has professional abilities in design, process, manufacturing, quality and process control.With excellent technology and rich experience, we have a good reputation in the field.

Magnox adheres to customer orientation and serves customers in biopharmaceutical, food and beverage, precision chemical, solar photovoltaic, semiconductor chip, flat panel display, scientific research, military industry, aerospace and other industries.With years of professional experience, we understand the strict requirements of these industries and have mature solutions. For example, the cleanliness control of the system, the precision control of welding products, etc.We will provide the best solution to achieve the customer's goal under the strict requirements of customers.

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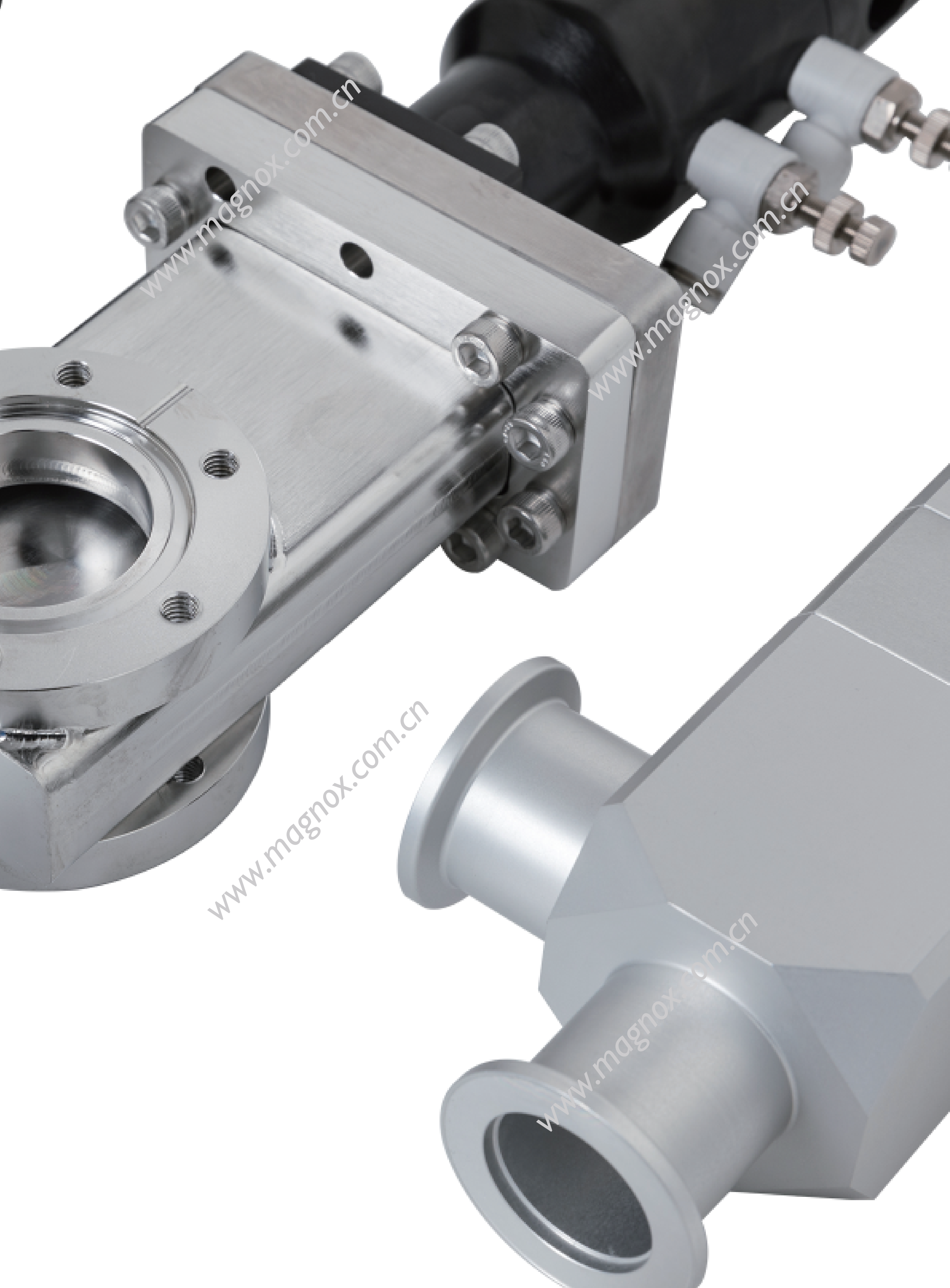


1 Isolation Valves

Vacuum Poppet Valves

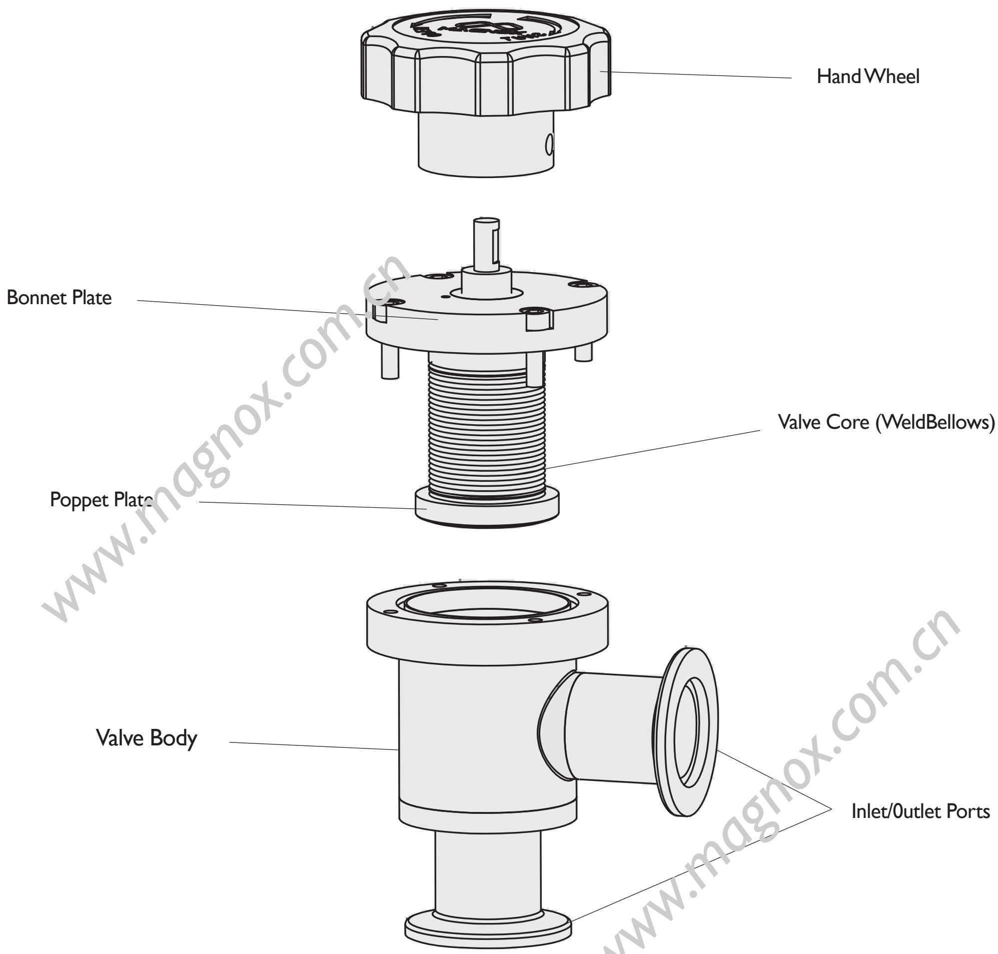
Construction
产品描述

The angle valve's applications include rough pumping shut-off, foreline switching between pumps, cryo-sorption pump shut-off isolating foreline traps, UHV shut-off, sorption trap isolation, isolating sections baked to high temperature, and more.

As the name implies, the valve's ports are at 90° with the flapper's motion along the axis of one port. Although large-diameter angle valves (ften called poppet valves) exist, the most popular sizes have ports between/" and 3". Their right angle construction reduces the gas conductance for a given bore-size to somewhat less than the equivalent length straight tube.

The flapper is sealed by o-ring, elastomeric disk, or soft meta/hard metal. The last named can be baked to high temperatureand are extensively used on UHV systems. Although other actuator seals may exist, by far the most common is the flex metal bellows seal. The bellows' "outer end is usually welded to a plate attached to the actuator shaft. The "inner"end is sealed to the body by using either an o-ring or knife-edge copper gasket seal similar to the CF flange.

Manually Angle Valve
手动角阀



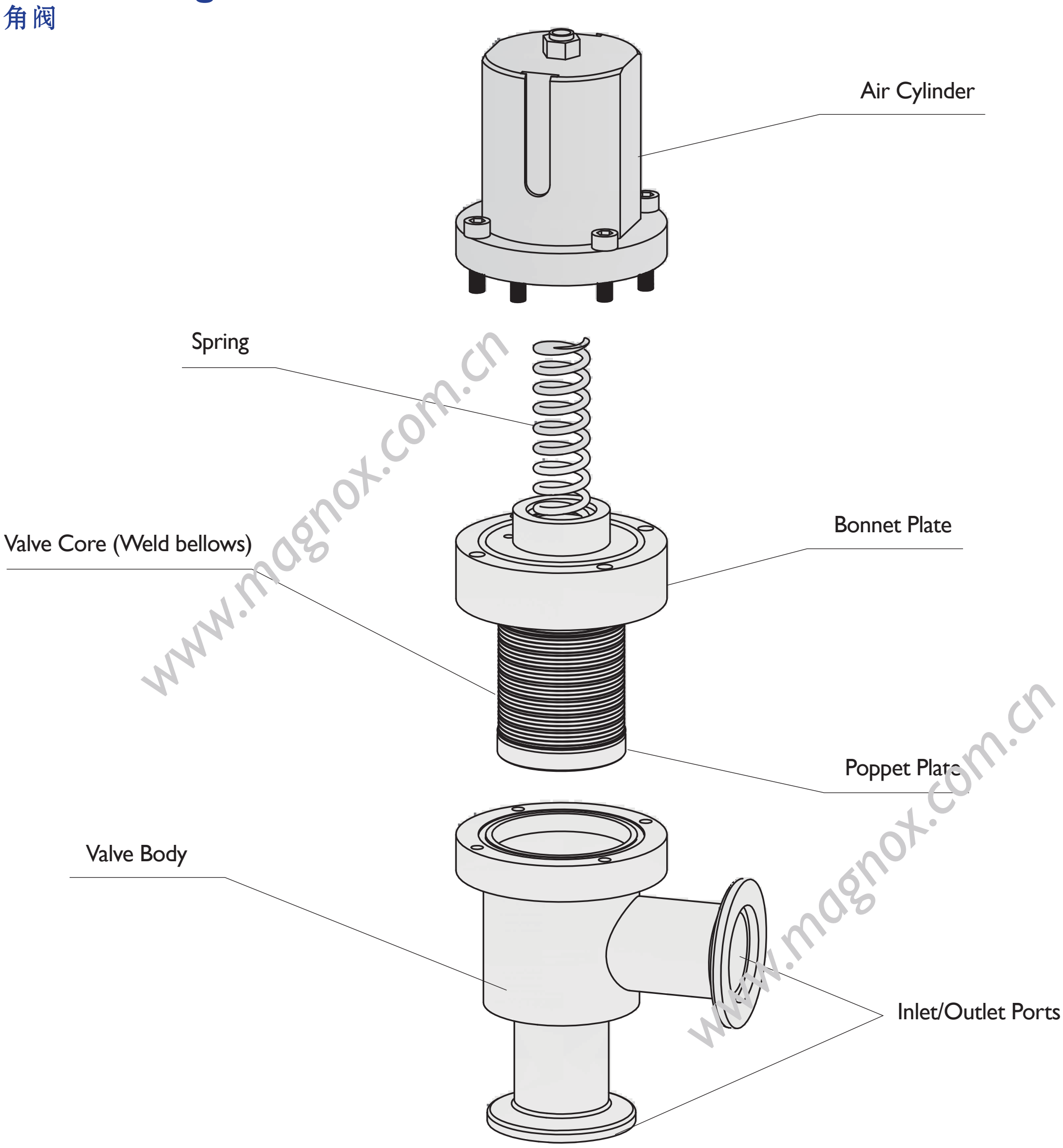
Construction
产品描述

Angle valves are actuated manualy, by pneumatc cylinder, or by electro-magnetics.Valves using he last mechanism are someimes called 'solenoid valves, ' but the similarity of name to valves that divert compressed air in pneumatic valve actuation (noted earlier) causes contusion.Here, the 'solenoid' directy actuates the valve's flapper.This is a vacuum valve(not a compressed air valve) and is attractive for automating some parts of a system without the need for compressed air.

Thee valves are essentially on-off devices and are rarely used for conductance contorl (see below) except in the most primtive, manual way. Some advantages are constuction simpiciy and ease of mounting/demounting. Positioning a valve between two (rigid tubes with a common centerline, or parallel/offset enterlines, is more diffcult than using an angle valve and tubes at 90°.

Alhough well able to withstand 15 psi overpressure on either side of the flapper, the valve is often mounted with the fapper o-ring facing the nomaly evacuated space.A popular version of this valve is known as the block valve because it is manufactured from a block of aluminum.

Pneumatic Angle Valves
气动角阀



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Technical Data For General Vacuum Poppet Valves

通用真空挡板阀技术参数

Grade	Ultra High Vacuum	High Vacuum
valve Spool	Welded Metal Bellows	Welded Metal Bellows
Gate seal	FKM o-ring (Optional for FFKM)	FKM o-ring (Optional for FFKM)
Bonnet seal	OFHC metal gasket	FKM
Operate pressure range	2,000 mbar~1.33×10^{-10} mbar	2,000 mbar~1.33×10^{-8} mbar
Leak rate	1 33x10^{-9} mbar l/s He	1 33x10^{-9} mbar l/s He
Cycle life	>1,000,000 Cycles	
Temperature for valve body	250°C (482°F) Open, 200°C (392°F) Closed	
Temperature for actuator	100°C (212°F)	
Temperature for solenoid / position indicator	80°C	
Bake temperature	200°C (392°F) for FKM gate seal	100°C (212°F) for FKM gate seal
Valve body material	SS304L (Optional for SS316L)	
Mechanism material	SS304L	
Actuator material	Aluminum	
Mounting position	Any	
Position indicator (Optional)	Optional magnetic sensor with wire end	
Solenoid (optional)	Optional for 24V DC, standard	
Failure protection (included as standard)	Spring closed for KF16, KF25, KF40, KF50, CF1.33", CF2.75"	

Flange Size	KF16/CF16	KF25/CF25	KF40/CF35	KF50/CF50	ISO63/CF63	ISO80/CF80	ISO100/CF100	ISO160/CF160
Maximum Differential Pressure At Opening	2000 mbar							
Maximum Differential Pressure against Gate	2700 mba	2400 mba	2300 mba	2000 mba	3900 mba			4000 mba
Pneumatic Valve Open & Close Time /S	0.3/0.5	0.3/0.5	0.5/0.8	0.5/0.8	0.7/0.7	0.7/0.7	0.8/0.8	1.5/1.5
Valve's Conductance (Molecular Flow)	6 L/S	15 L/S	48 L/S	82 L/S	170 L/S	220 L/S	490 L/S	1090 L/S

General Poppet Valves Ordering Information
通用角阀订购信息

66221 – 0100 – PL – 50 – FK – 10 – 02 – A 3 R

产品系列	
66221	通用真空角阀

尺寸规格	
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	ISO250-F
1000N	NW250
1200	CF250
1200K	ISO320-K
1200F	ISO320-F
1200N	NW320

产品形式	
ML	手动90°
PL	气动90°
MY	手动Y型直线
PY	气动Y型直线
MZ	手动Z型
PZ	气动Z型
MT	手动三通
PT	气动三通

阀芯	
40	焊接波纹管 SUS316L
50	焊接波纹管AM350
10	挡板 无阀芯

密封圈材质	
FK	氟橡胶
FF	全氟醚橡胶

阀体材质	
10	SUS304
40	SUS316

阀盖密封方式	
01	O-Ring
02	无氧铜

磁性开关		
代码	数量	检测位置
空白	不选装	-
A	带2个	阀开闭
B	带1个	阀开
C	带1个	阀闭

电磁阀	
空白	不选装
1	AC220V
2	AC110V
3	DC24V
4	DC12V

电磁阀方向	
L	法兰面左
R	法兰面右
O	法兰面里

说明

1、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

Vacuum Poppet Valves

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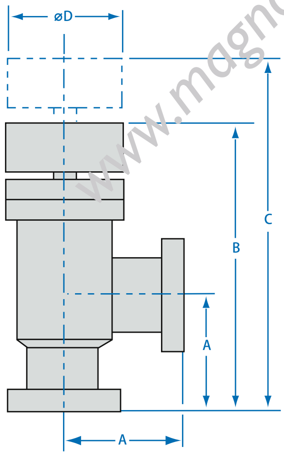
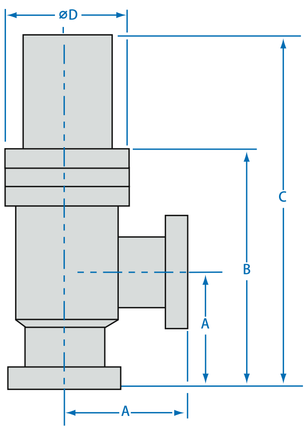


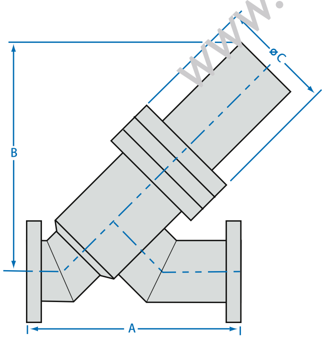
Manual Angle Valves

Flange Size	Dimensions, (in.)			
	A	B	C	D
CF1.33	2.50	5.06	5.81	2.25
KF16	2.15	4.71	5.46	2.25
CF2.12	2.05	4.49	5.49	2.25
KF25	2.03	4.47	5.47	2.25
CF2.75	2.46	5.84	7.34	3.00
KF40	2.40	5.70	7.28	3.00
CF3.38	3.48	8.08	10.08	3.50
KF50	3.40	8.00	10.00	3.50
CF4.50	3.38	8.65	11.15	4.00
ISO63	3.25	8.52	11.02	4.00
CF4.62	3.53	8.96	11.96	4.50
ISO80	3.50	8.93	11.93	4.50



Pneumatic Angle Valves

Flange Size	Dimensions, (in.)			
	A	B	C	D
CF1.33	2.50	5.06	6.76	2.25
KF16	2.15	4.71	6.41	2.25
CF2.12	2.05	4.49	6.19	2.25
KF25	2.03	4.47	6.17	2.25
CF2.75	2.46	5.84	7.77	3.00
KF40	2.40	5.70	7.71	3.00
CF3.38	3.48	8.08	11.46	3.50
KF50	3.40	8.00	11.38	3.50
CF4.50	3.38	8.65	10.48	4.00
ISO63	3.25	8.52	10.35	4.00
CF4.62	3.53	8.96	11.28	4.50
ISO80	3.50	8.93	11.25	4.50
CF6.0	4.66	9.99	15.43	6.50
ISO100	4.47	9.80	15.24	6.50

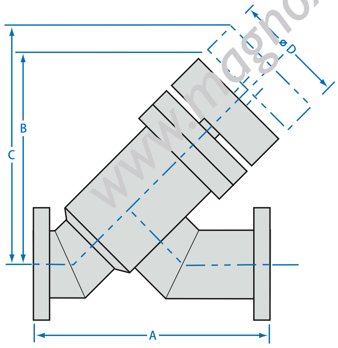


Pneumatic Inline Valves

Flange Size	Dimensions, (in.)		
	A	B	C
CF1.33	4.70	4.32	2.25
KF16	4.00	4.32	2.25
CF2.12	4.23	4.27	2.25
KF25	4.20	4.27	225
CF2.75	5.24	5.69	3.00
KF40	5.12	5.69	3.00
CF3.38	7.15	7.94	3.50
KF50	7.00	7.94	3.50
CF4.50	8.50	7.64	4.00
ISO63	8.25	7.64	4.00
CF4.62	10.61	8.70	4.50
ISO80	10.55	8.70	4.50

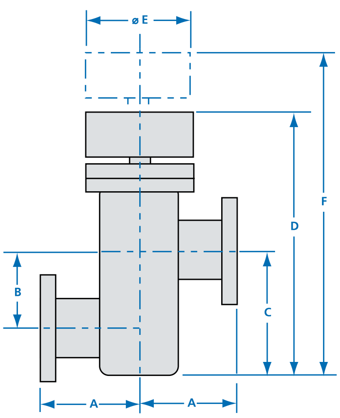
Vacuum Poppet Valves

MAGNOX



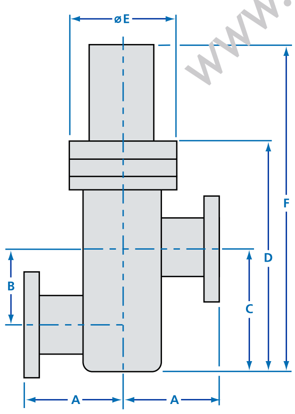
Manual Angle-in-line Valves

Flange Size	Dimensions, (in.)			
	A	B	C	D
CF1.33	4.70	3.47	4.01	2.25
KF16	4.00	3.47	4.01	2.25
CF2.12	4.23	3.42	4.14	2.25
KF25	4.20	3.42	4.14	2.25
CF2.75	5.24	4.55	5.61	3.00
KF40	5.12	4.55	5.61	3.00
CF3.38	7.15	6.19	9.15	3.50
KF50	7.00	6.19	9.15	3.50
CF4.50	8.50	6.99	10.31	4.00
ISO63	8.25	6.99	10.31	4.00
CF4.62	10.61	7.71	11.38	4.50
ISO80	10.55	7.71	11.38	4.50



Manual Angle Valves,Z -Type

Flange Size	Dimensions, mm					
	A	B	C	D	C	D
CF1.33	63.5	28	47	113	57	132
KF16	54.6	28	47	113	57	132
CF2.12	52.1	35	57	119	57	145
KF25	51.6	35	57	119	57	145
CF2.75	63.5	48	79	166	76	204
KF40	61.0	48	79	166	76	204
CF3.38	88.4	67	105	222	89	273
KF50	86.4	67	105	222	89	273
CF4.50	85.9	79	125	259	102	323
ISO63	82.6	79	125	259	102	323
CF4.62	89.7	93	143	280	114	357
ISO80	88.9	93	143	280	114	357



Pneumatic Angle Valves,Z - Type

Flange Size	Dimensions, mm					
	A	B	C	D	E	F
CF1.33	63.5	28	47	102	57	156
KF16	54.6	28	47	102	57	156
CF2.12	52.1	35	57	108	57	162
KF25	51.6	35	57	108	57	162
CF2.75	63.5	48	79	149	76	215
KF40	61.0	48	79	149	76	215
CF3.38	88.4	67	105	194	89	308
KF50	86.4	67	105	194	89	308
CF4.50	85.9	79	125	231	102	306
ISO63	82.6	79	125	231	102	306
CF4.62	89.7	93	143	253	114	340
ISO80	88.9	93	143	253	114	340
CF6.0	118	93	187	326	165	464
ISO100	114	93	187	326	165	464

Vacuum Poppet Valves

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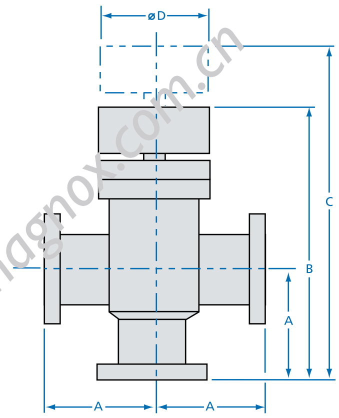
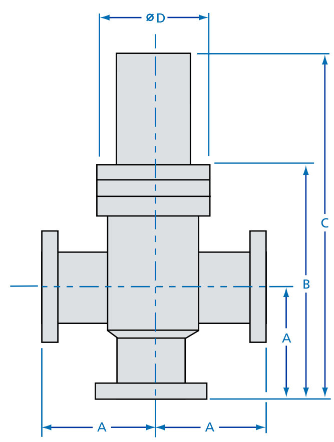
Manual Angle Valves, Tee - Type

Flange Size	Description	Dimensions, mm			
		A	B	C	D
CF1.33	Rotatable 1.33 CF	63.5	129	148	57
KF16	NW-168	54.6	120	139	57
CF2.12	Rotatable 2.12 CF	52.1	114	140	57
KF25	NW-25B	51.6	114	139	57
CF2.75	Rotatable 2.75 CF	62.5	148	186	76
KF40	NW-40B	61.0	147	185	76
CF3.38	Rotatable 3.38 CF	88.4	205	256	89
KF50	NW-50B	86.4	203	254	89
CF4.50	Rotatable 4.50 CF	85.9	220	283	100
ISO63	IS0-63-250-0F	82.6	216	280	100
CF4.62	Rotatable 4.62 CF	89.7	228	304	114
ISO80	IS0-80-300-0F	88.9	227	303	114



Pneumatic Angle Valves, Tee - Type

Flange Size	Dimensions, mm			
	A	B	C	D
CF1.33	63.5	117	172	57
KF16	54.6	108	163	57
CF2.12	52.1	102	157	57
KF25	51.6	102	157	57
CF2.75	62.2	132	197	76
KF40	61.0	130	196	76
CF3.38	88.4	177	291	89
KF50	86.4	175	289	89
CF4.50	85.9	192	266	100
ISO63	82.6	189	263	100
CF4.62	89.7	201	287	114
ISO80	88.9	200	286	114
CF6.0	118	254	392	165
ISO100	114	249	387	165



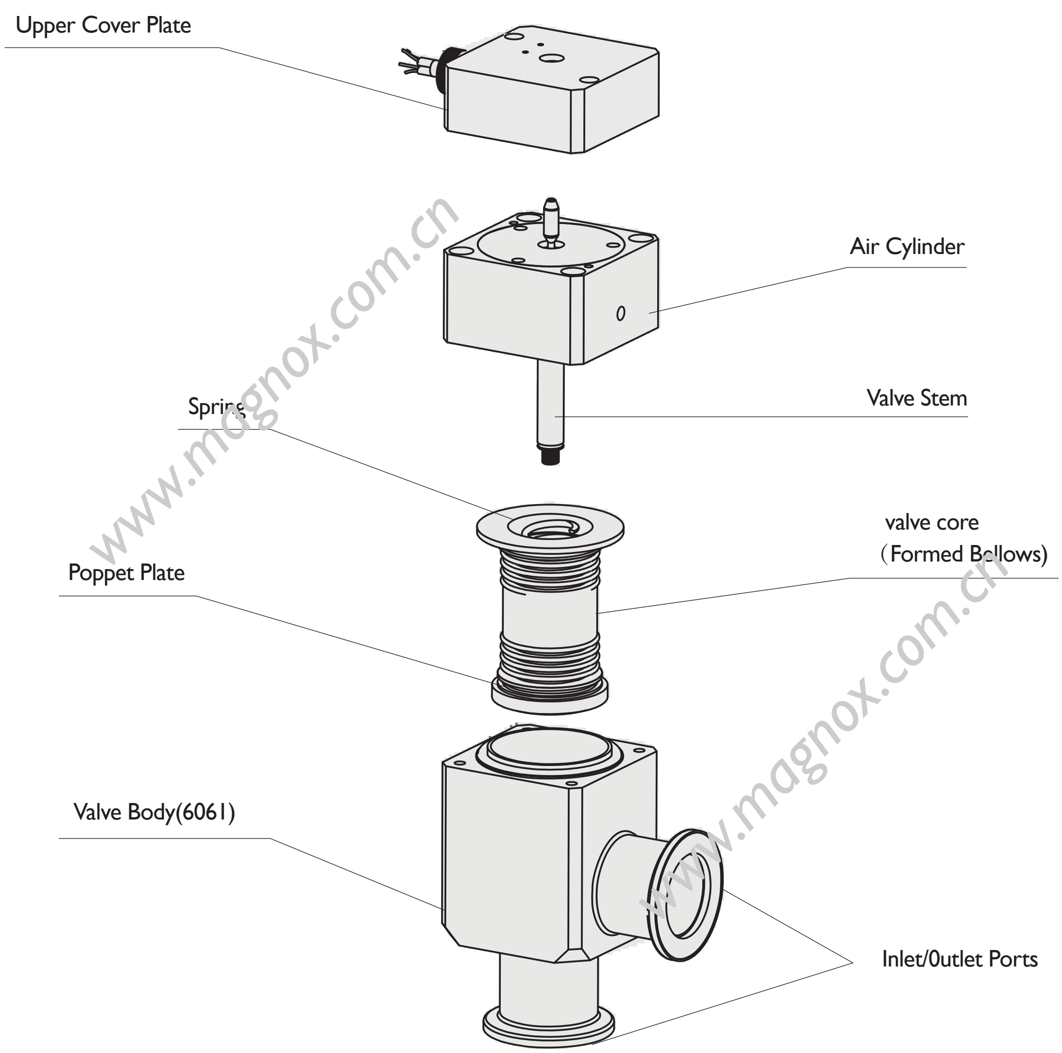
MAGNOX

All-In-One Aluminum Block Poppet Valve

一体式方形铝质挡板阀

Features

- **Uniform baking temperature**
  Excellent thermal conductivity results in a uniform temperature for the entire valve body and a marked decrease in the condensation of gases inside the valve.
- **Minimal outgassing**
  Low outgassing makes it possible to use a lower capacity pump and also shorten exhaust time
- **High corrosion resistance to fluorine gas**
- **Lightweight, Compact**
  Large conductance, small body, excellent resistance against fluorine corrosion (body)
- **Minimal contamination from heavy metals**
  The valve does not contain heavy metals such as Ni (nickel) or Cr (chrome) and it's low sputtering yield also helps to minimize the heavy metal contamination of semiconductor wafers.
- **The bellows assembly can be replaced, which reduces maintenance costs and waste materials.**



Technical Data For All-In-One Poppet Valves
一体式挡板阀技术参数

Flange Size		KF16	KF25	KF40	KF50	KF63	KF80
Valve type		Normally closed (Pressurize to open, Spring seal)					
Fluid		Inert gas under vacuum					
Operating temperature [°C]		5 to 150					
Operating pressure [Pa(abs)]		1×10^{-5} to atmospheric pressure					
Conductance [L/s]*1		5	14	45	80	160	200
Leakage [Pa . m^3/s]	Internal	For standard seal material (FKM) 1.3×10^{-11} at normal temperature, excluding gas permeation					
	External	For standard seal material (FKM) 1.3×10^{-11} at normal temperature, excluding gas permeation					
Flange type		KF (NW)				KF(NW),ISO-K	
Principal materials		Body: Aluminum alloy, Bellows: &tainless steel 316L, Chief part: Stainless steel, FKM (Standard seal material)					
Surface treatment		Externa: Hard anodized Intemal: Raw material					
Pilot pressure [MPa(G)]		0.4 to 0.7					
Cycle Life(Valve Core)		>3500000					

All-In-One Poppet Valves Ordering Information
一体式挡板阀订购信息

66222 - 0150 PL 1 10 - A 3 2 1 - A

产品系列

66222	一体成型角阀

产品代码

0075	KF16
0100	KF25
0150	KF40
0200	KF50
0250K	ISO63-K
0250N	NW63
0300K	ISO80-K
0300N	NW80

产品形式

ML	手动90°角阀
PL	气动90°角阀
MY	手动Y型直线角阀
PY	气动Y型直线角阀

阀芯

1	成型波纹管阀芯
2	挡板密封

阀体材质

AL	6061
10	SUS304
40	SUS316L

磁性开关

代码	数量	检测位置
空白	不选装	-
A	带2个	阀开闭
B	带1个	阀开
C	带1个	阀闭

电磁阀

空白	不选装
1	AC220V
2	AC110V
3	DC24V
4	DC12V

电磁阀方向

1	法兰侧
2	法兰面左
3	法兰面右
4	法兰面里

加热器选配

Blank	不选配
1	选配2片
2	选配3片
3	选配6片

装配环境

A	普通
C	洁净间

说明

1、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；
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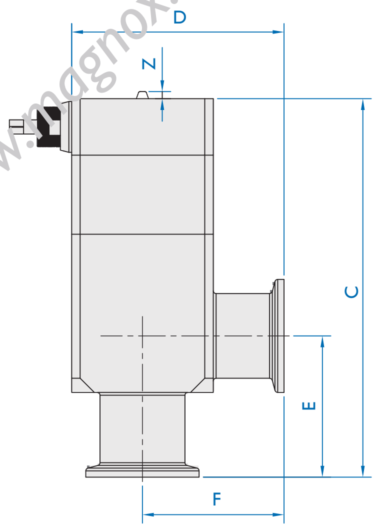
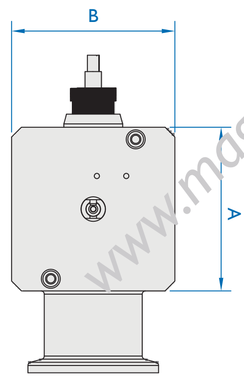
Vacuum Poppet Valves

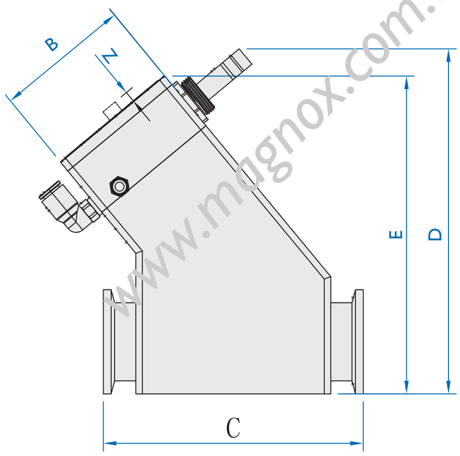
MAGNOX





Pneumatic All-In-One Angle Valves

Part Number	Flange Size	Dimensions, mm						
		A	B	C	D	E	F	Z
66222-0075-PL	KF16	42.00	42.00	113.00	61.00	40.00	40.00	32.20
66222-0100-PL	KF25	52.00	52.00	136.20	78.00	50.00	50.00	32.20
66222-0150-PL	KF40	65.00	65.00	161.50	97.50	65.00	65.00	32.20
66222-0200-PL	KF50	78.00	78.00	189.00	109.00	70.00	70.00	32.20



Pneumatic All-In-One Inline Valves

Part Number	Flange Size	Dimensions, mm					
		A	B	C	D	E	Z
66222-0075-PY	KF16	42.00	42.00	80.00	114.00	104.00	32.20
66222-0100-PY	KF25	52.00	52.00	100.00	136.00	122.00	32.20
66222-0150-PY	KF40	65.00	65.00	130.00	162.50	148.00	32.20
66222-0200-PY	KF50	78.00	78.00	178.00	198.00	186.00	32.20

MAGNOX

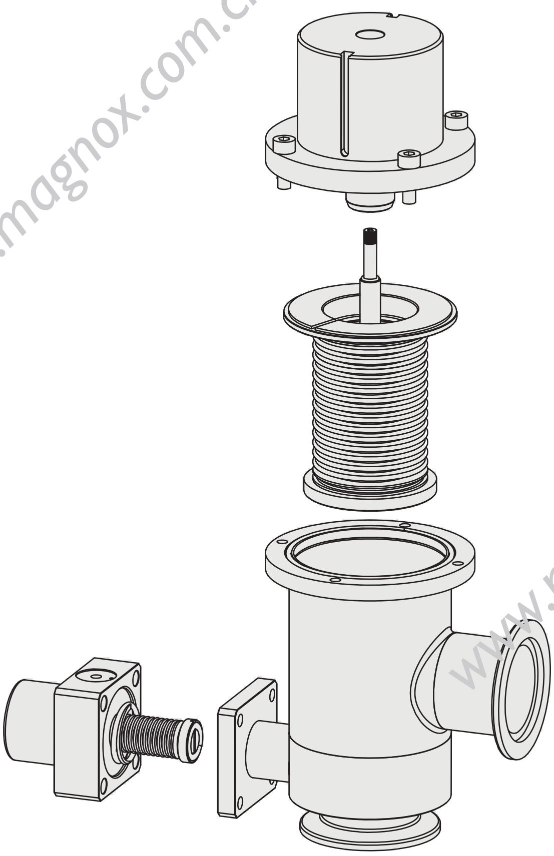
Applications
应用场景

To achieve a soft pumpdown of your vacuum system with limited space conditions, MAGNOX recommends the Two-Stage Valve. A low-profile isolation valve with an integrated small bypass valve, the Two-Stage Valve significantly simplifies system setup and reduces costs. The Two-Stage valve is best suited for high vacuum applications, specifically semiconductor or optical processing for which a cleaner environment is necessary. With the integrated slow pumpdown feature, turbulent flow is diminished, reducing particle contamination and damage to the product.

The Two-Stage Valve soft starts the system in two easy steps without the use of secondary bypass lines, which clog easily and are expensive to maintain. In the first stage, the bypass valve pumps down slowly from atmospheric pressure to a vacuum pressure specified by the end-user. In the second stage, the main valve opens, allowing use of full pumping speed. The main valve is smaller, lighter, and lower in cost than similar competitive valves while offering improved reliability and increased uptime. The square cap design is easy to assemble and maintain.

Features
产品特性

- Compact design
- Provides soft pumpdown and isolation of your vacuum system
- Reduces particulate contamination during early turbulent pumpdown
- Adjustable conductance for variable pumpdown speed
- Eliminates the need for small bypass lines thatclog easily
- Bellows-sealed poppet valves
- Bellows are formed for less particle trapping and a longer cycle life
- Angle or inline option
- Available in port diameters of 1, 1½ , and 2inches
- Choice of KF flanges, CF flanges, or weldstubs
- May easily be accommodated into existing systems



Vacuum Poppet Valves

Item Type	Technical Data			
Material	Body	SUS304/SUS316L		
	Cylinder Assembly	AL		
	Valve Core	SUS316(Formed Bellows)		
	O-Ring	FKM/FFKM		
Cycle Life	⩾3500000			
Leakage Rate	HV	< $2x10^{-9}$ mbar.l /sec for O-ring sea		
	UHV	$5x10^{-10}$ mbar. l /sec for gasket seal		
Bake Temperature	Valve body	< 150°C		
	Manual and pneumatic actuator	< 80°C		
Pressure Range (mbar)	HV	$1x10^{-8}$~1000		
Leakage Rate	UHV	$1x10^{-10}$~1000		
Standard Seal	HV	Gate	Viton O-ring	
		Bonnet		
	UHV	Gate	Viton O-ring	
		Bonnet	Copper Gasket	
Actuator	Pneumatic			
Operating Air Pressure	Φ6 mm,4-6.5 Kg/cm'(overpressure)			
Actuation Time	Main: 40 - 160 msec to open, 90 - 220 msec to close, depending on configuration Bypass: 100 msec (both)			
Options	A. Position indicator; B. Pneumatic control solenoid valve; C. Roughing port; D. Other material Gate O-ring seal;			
Maximum Differential Pressureagainst Gate	＜1090 mbar			
Flange Size	KF25/CF25	KF40/CF35	KF50/CF50	ISO63/CF63
Maximum Differential Pressure At Opening	2000 mbar			
Maximum Differential Pressure against Gate	2700	2400	2300	2000
Pneumatic Valve Open & Close Time /S	0.3/0.5	0.3/0.5	0.5/0.8	0.5/0.8
Valve's Conductance (Molecular Flow)	14L/S	45L/S	80L/S	160L/S

Two-Stage Poppet Valves Ordering Information
双级提升阀订购信息

66223 - 0150 - PL FK 40 - I 3 A

产品系列	
66223	双级角阀系列

尺寸规格	
0100	KF25
0150	KF40
0200	KF50
0250K	ISO63-K
0300K	ISO80-K
0400K	ISO100-K
0600K	ISO160-K

产品形式	
PL	手动90°直角型
PY	气动180°直线型（Y型）
PZ	气动Z型
PT	气动三通型

密封圈材质	
FK	氟橡胶
FF	全氟醚橡胶

阀体材质	
10	SUS304
40	SUS316L

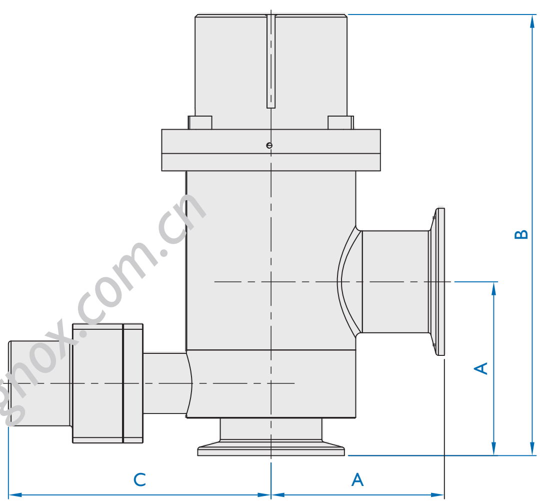
软抽阀	
Blank	不选装
I	选装

电磁阀	
Blank	不选装
1	AC220V
2	AC110V
3	DC24V
4	DC12V

磁性开关		
代码	数量	检测位置
空白	不选装	-
A	带2个	阀开闭
B	带1个	阀开
C	带1个	阀闭

说明

1、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



Manual Viton Seal Tee Valves

Part Number	Flange Size	Dimensions, mm			
		A	B	C	D
66223-0100	KF25	63.5	129	148	57
66223-0150	KF40	54.6	120	139	57
66223-0200	KF50	52.1	114	140	57

Vacuum Butterfly Valves

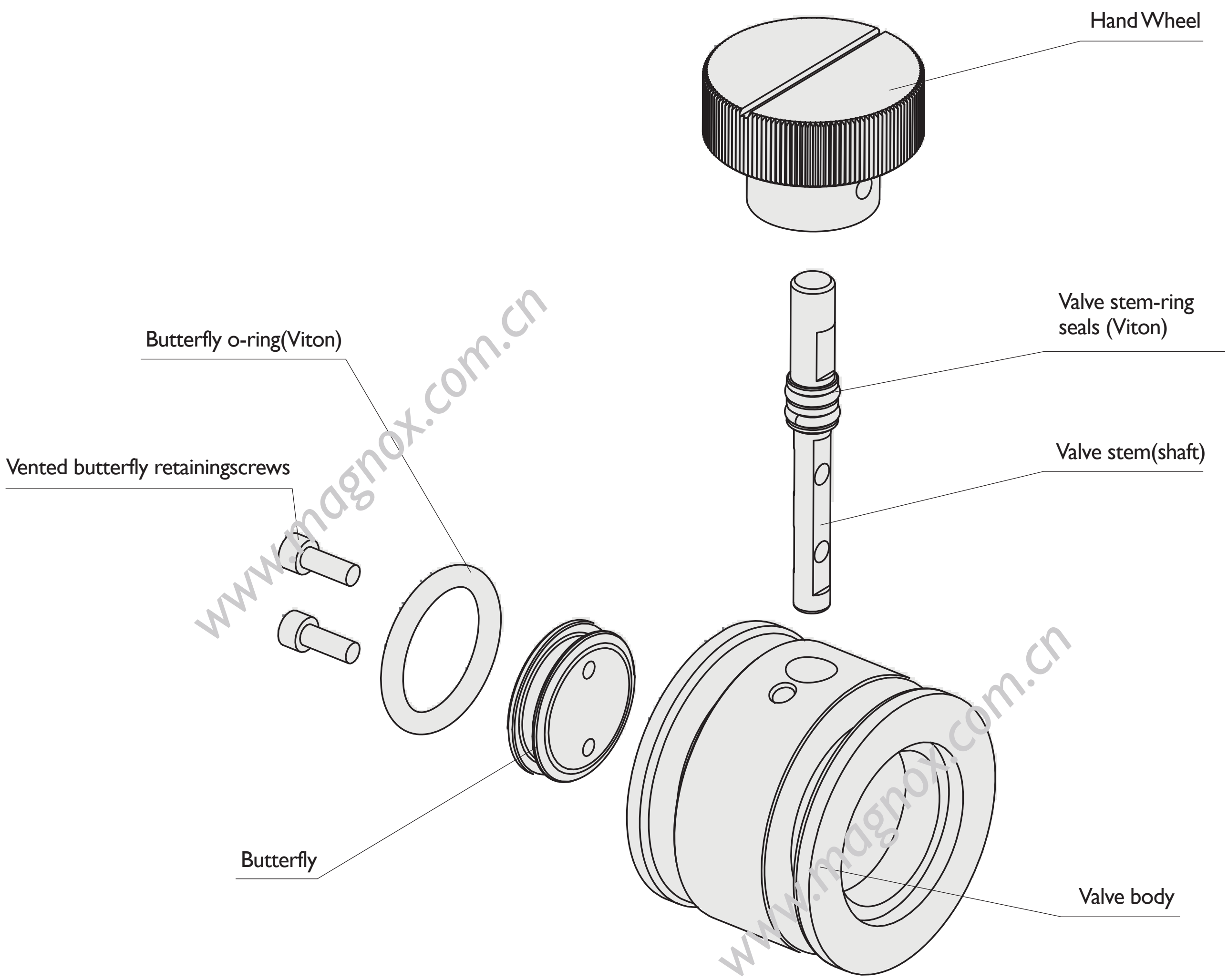
Product Description
产品描述

MAGNOX butterfly valves require only one-quarter turn rotation of the handle to go from fully open to the fully closed position. In the CF and KF flange series, a spring loaded ball bearing becomes seated in an indent providing a positive mechanical stop.All other size valves employ a roll pin stop method.

These quick-acting butterfly valves feature an improved sealing action.The opening in the body of the valve has been machined at a slight angle to the plane of the flapper.The flapper is set to rotate slightly off-centre. On closure, this causes the sealing pressure to be applied more uniformly all around the O-ring.Areliable, positive seal is made and the tendency of previous designs to roughen the surface of the O-ring and eject it from its groove is eliminated.

MAGNOX butterfly valves are low outgassing.All internal surfaces are machined from solid stainless steel bar stock.The handle is made of aluminium.A small O-ring on the stem prevents shaft leakage.

The valves are offered with a choice of CF ultrahigh vacuum metal-seal flanges or ISO KF O-ring seal flanges.



Vacuum Butterfly Valves

Specifications

- Port OD:3/4 to 2 inches
- Materials:

  Body:304 stainless steel

  Knob:Aluminum

  Portsea:FKM
- Actuation: Manualusing knurled knob
- Temperature range:

  Sustained:s150°C;

  Intermittent:s204°C
- Vacuumrane:

  FKM O-ring:≥1×10^{-9} Torr-High vacuum

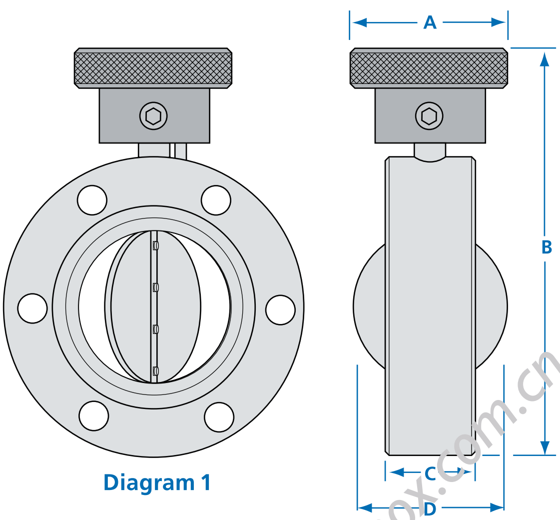


Diagram 1

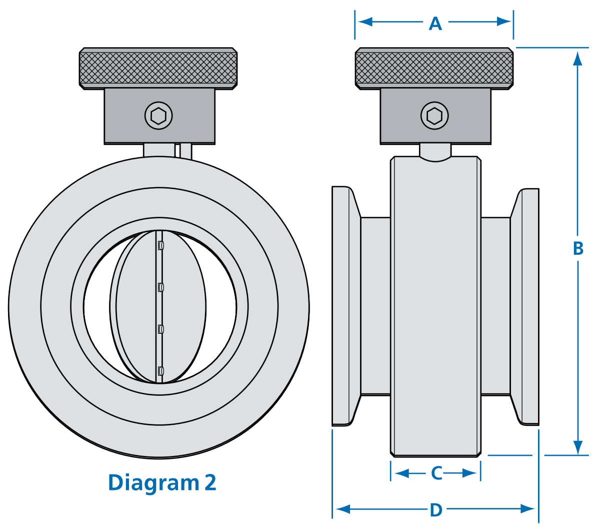


Diagram 2

Manual Butterfly Valves

Part Number	Dimensions, mm					
	Diagram	Flange Type	A	B	C	D
66209-0133	1	1.33 CF	19	51	19	19.1
66209-0075	2	NW 16	19	51	19	37.8
66209-0212	1	2.12 CF	19	70	25	26.0
66209-0100	2	NW 25	19	70	25	31.8
66209-0275	1	2.75 CF	38	94	19	25.4
66209-0150	2	NW 40	38	94	35	34.0
66209-0338	1	3.38 CF	38	124	25	48.0
66209-0200	2	NW 50	38	124	25	42.7

MAGNOX

Vacuum Ball Valves Ordering Information
真空球阀订购信息

66210 – 0150 – P – FK – 40 – NC – 3

产品系列

66210	铸造三片式球阀
66211	NC机械加工三片式

尺寸规格

0075	KF16
0100	KF25
0150	KF40
0200	KF50
0250K	ISO63-K
0250N	NW63
0300K	NW80-K
0300N	NW80
0400K	ISO100-K
0400N	NW100
TW	Butt Weld

驱动形式

M	手动
P	气动

密封圈材质

FK	氟橡胶
FF	全氟醚橡胶

阀体材质

10	SUS304
40	SUS316

执行器状态

NO	常开
NC	常闭

电磁阀

Blank	No So lenoid
1	AC220V
2	AC110V
3	DC24V
4	DC11V

说明

1、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；
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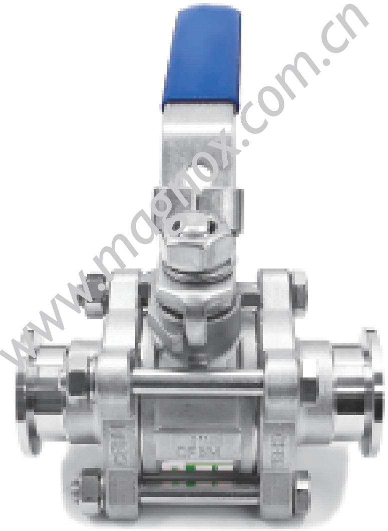
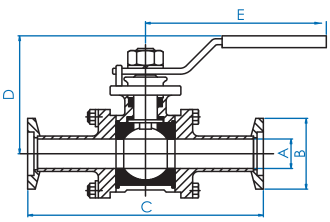
Vacuum Ball Valves

MAGNOX

Specifications



- Flange: KF(NW)
- Operation: 1/4 Turn manual open and close
- Fittngs: N/A
- Sensors: N/A
- Wetted materials: SS316,Viton,PTFE
- Leak rate mbar-L/sec: $9.0*10^{-9}$
- Max pressure: 56.8 PSI
- Pneumatic supply: N/A
- Operation time: N/A
- Operating temperature: 150°C

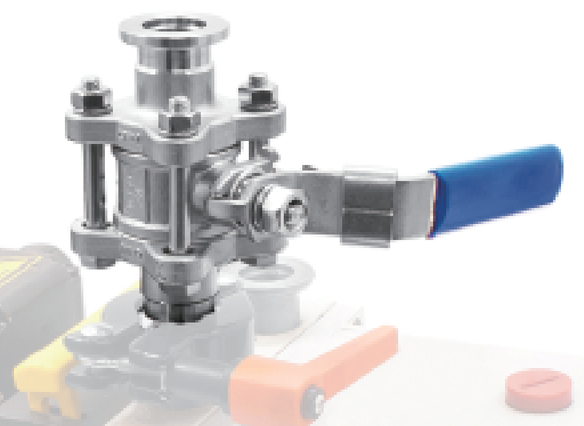


Casting Manual Ball Valve

Part Number	Flange Size	Dimensions, mm				
		A	B	C	D	E
66210-0075-M	KF16	15.50	30.00	92.00	58.00	132.00
66210-0100-M	KF25	22.10	40.00	107.00	62.00	132.00
66210-0150-M	KF40	34.80	55.00	130.00	98.00	175.00
66210-0200-M	KF50	47.50	75.00	151.00	104.00	175.00

Casting Pneumatic Ball Valves

Part Number	Flange Size	Dimensions, mm				
		A	B	C	D	E
66210-0075-P	KF16	92.00	30.00	147.00	136.00	164.00
66210-0100-P	KF25	107.00	40.00	147.00	145.00	174.00
66210-0150-P	KF40	130.00	55.00	168.00	173.00	213.00
66210-0200-P	KF50	151.00	75.00	184.00	195.00	243.00



MAGNOX

Ball Valves Specially For MOCVD

Specifications

Vacuum and temperature ratings

- Vacuum rated to 1 X 10^{-8} Torr
- Helium leak rated less than 1 X 10^{-9} std. cc/sec
- Standard fuoroelastomer seal (Viton®): -26°C to 205°C(15F to 400F)

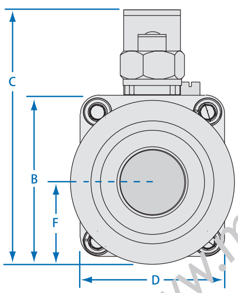
Materials:

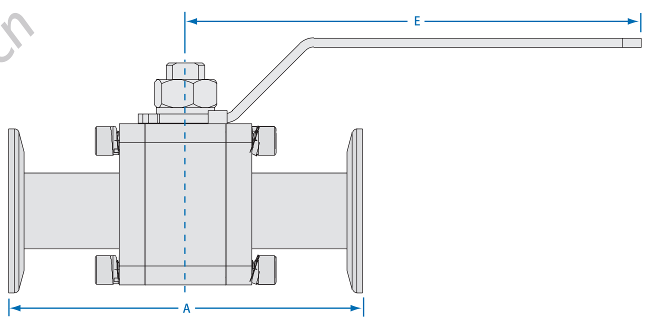
- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fuoroelastomer (Viton®).
- Seats: PTFE Tefon®
- Lubricant: Dow Corning® High Vacuum Grease

Features

General

- Straight-through, unimpeded fow
- Higher conductance than a comparable poppet valve
- Poppet less design has less wetted surface
- 1/4 turn, quick actuation
- “Self-cleaning”action prevents deposition buildup
- Valves can be easily serviced with Magnox's standard maintenance kits



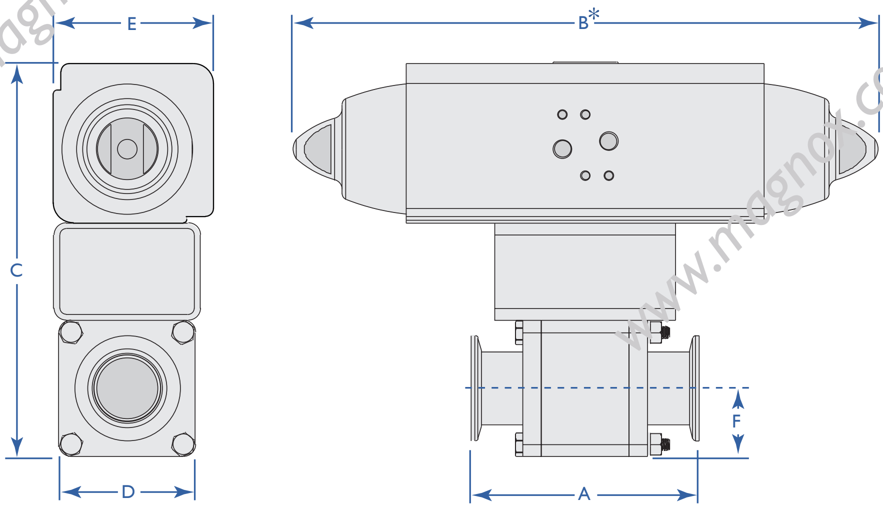


CNC Manual Ball Valve

Part Number	Flange Size	Dimensions, mm					
		A	B	C	D	E	F
66211-0075-M	NW-16	88	47	75	47	147	24
66211-0100-M	NW-25	100	47	75	47	147	24
66211-0150-M	NW-40	118	54	85	48	157	25
66211-0200-M	NW-50	126	85	116	85	183	42

Call for information on larger sizes.

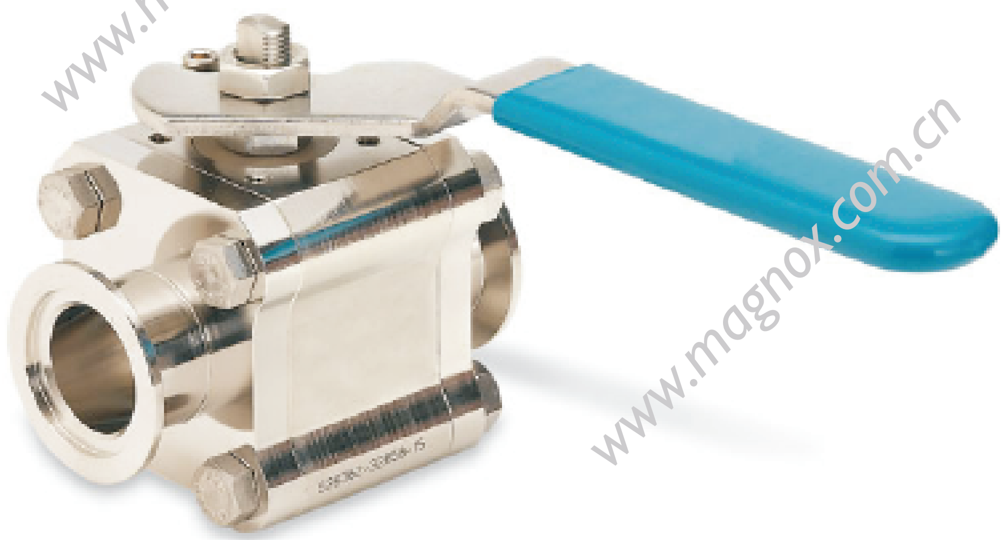
MAGNOX



CNC Pneumatic Ball Valve

Part Number	Flange Size	Dimensions, mm					
		A	B	C	D	E	F
66221-0075-P	NW-16	88.1	259	168	47	70	24
66221-0100-P	NW-25	99.8	259	175	48	70	25
66221-0150-P	NW-40	118.4	259	175	48	70	25
66221-0200-P	NW-50	126.2	259	192	71	70	36

Call for information on larger sizes.



Vacuum Gate Valves

General Vacuum Gate Valves

通用真空闸阀

Valves handle applications in semiconductor and other processing, and are used most often to isolate pumps and sample entry locks from HV or UHV work chambers.

Features

- General purpose Electro polished Stainless Steel
- Provide high conductance with in a compact design
- Shock-free operation with minimum vibration
- 200.000-cycle service before requiring maintenance
- Available in manual or pneumatic operation

NOTE: For ease of maintenance, the carriage assembly can be removed from the body without requiring removal of the valve from the system.

- Pneumatic valves close or remain closed in the event of power loss or loss of air pressure
- All pneumatic 1.5" flange O.D. and larger models in corporatemagnetic REED switches for position indication
- Pneumatic valves feature a 24VDC solenoid operator at no extra charge (other voltages, both AC and DC, available on request)

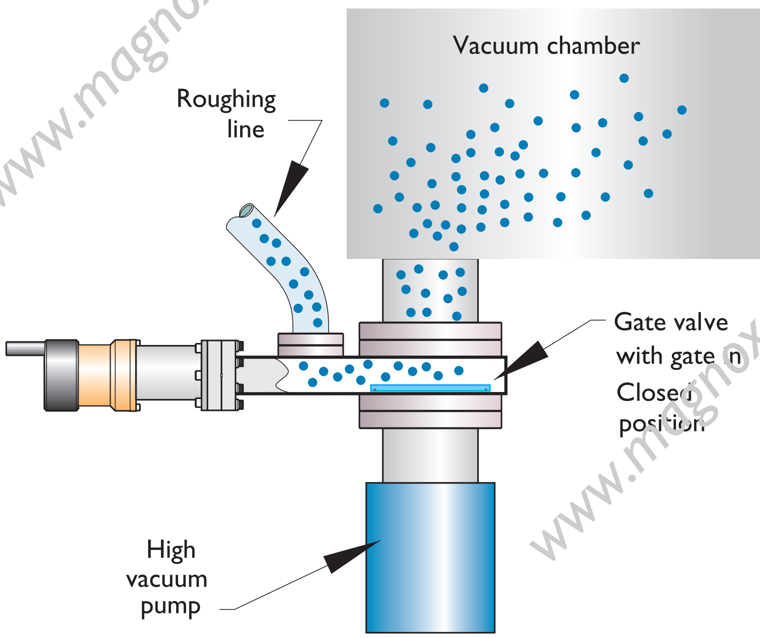
NOTE: Please contact us for options such as roughing ports or valves that remain open in the event of power failure.

Roughing port

With the exception of the DN16 gate valve, all valves can be fitted with roughing ports.Valves with CF port flanges are supplied with CF roughing port flanges.Flush mounted roughing port flanges have tapped bolt holes, but those with tubular extensions have drilled through bolt holes. Gate valves fitted with ISO KF and ISO LF port flanges are supplied with ISO KF roughing port fanges. Roughing ports will be installed on the side opposite the gate seal (the carriage side of the valve).Although the location of the roughing port does not affect its function, the positioning of the gate is important.

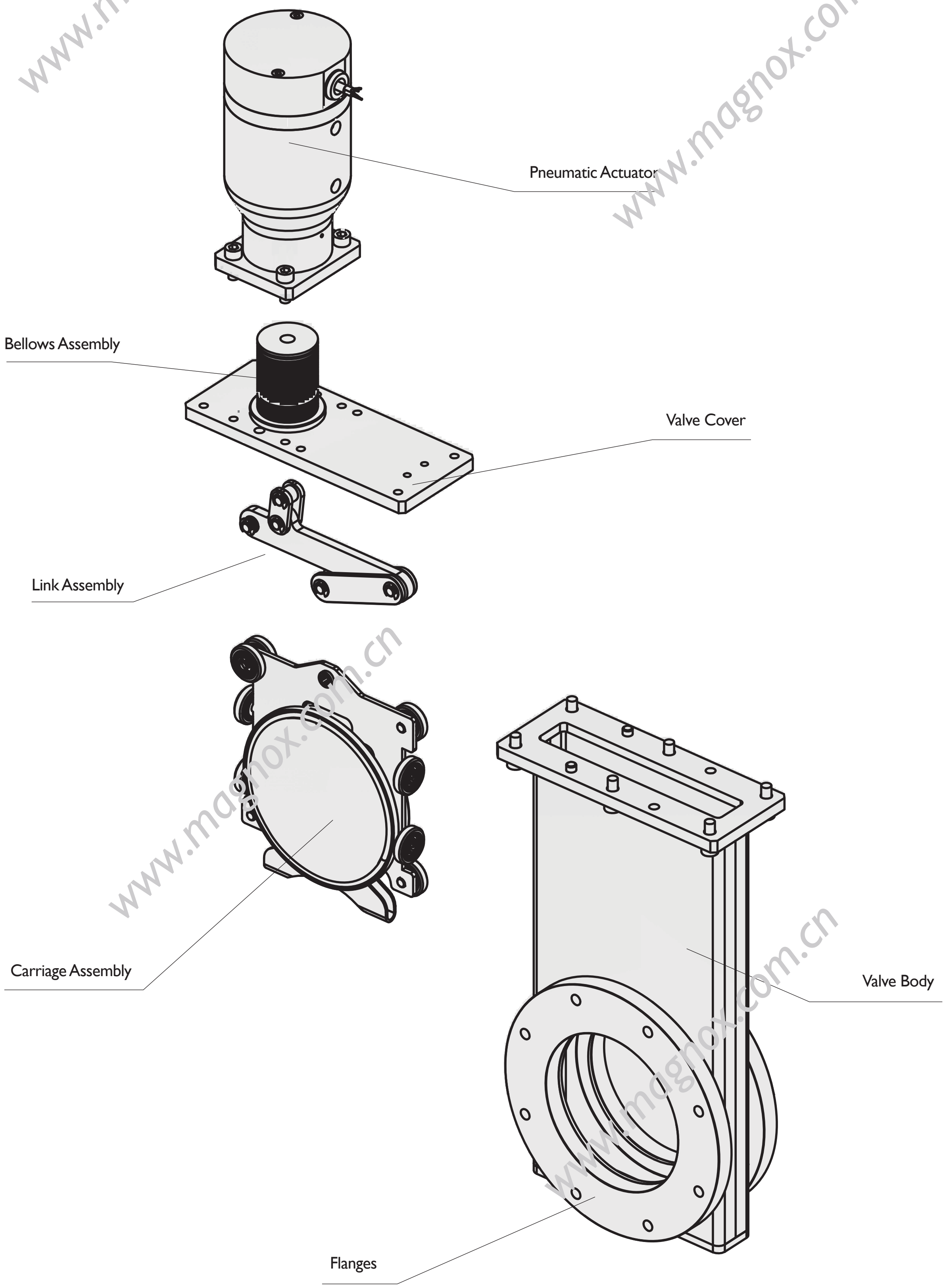
A roughing port provides a path to a vacuum chamber through the gate valve body.With the gate closed, the valve body and chamber may be evacuated by a vacuum roughing pump.

Typical installation

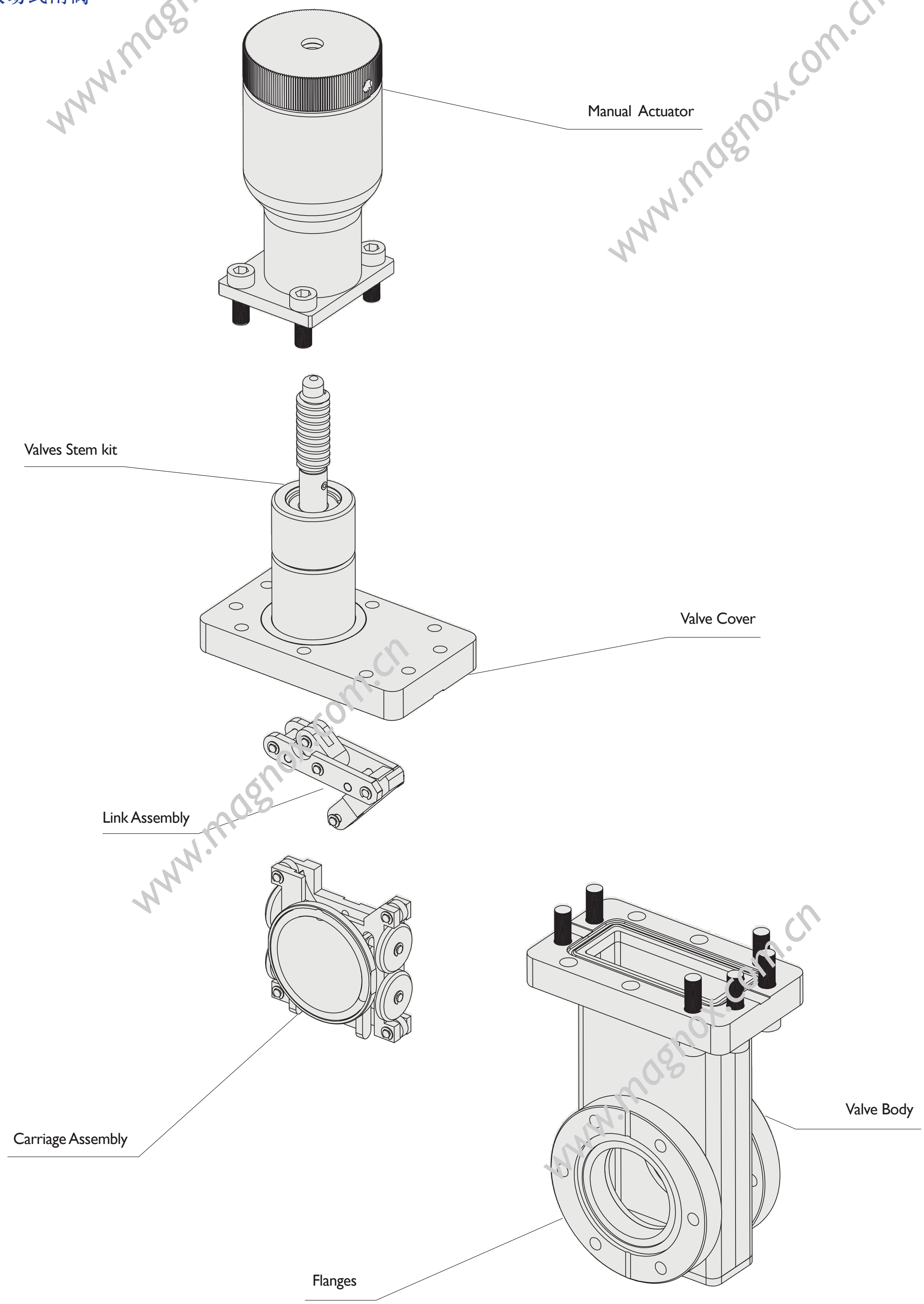


MAGNOX

Ball Groove Mechanism
滚珠式闸阀



Linkage Mechanism
联动式闸阀



MAGNOX

Technical Data For General Vacuum Gate Valves

通用真空闸阀技术参数

Item Type	Technical Data			
Material	Body			SUS304
Material	Cariage			SUS304
Material	Gate			SUS304
Material	Bellows			AM350
Cycle Life	HV	size under 8"(HV)		200000
Cycle Life	HV	size above 8"(HV)		50000
Cycle Life	UHV	size under 4"(UHV)		100000
Cycle Life	UHV	size above 4"(UHV)		50000
Leakage Rate	HV	< $2x10^{-9}$ mbar.l /sec for O-ring sea		
Leakage Rate	UHV	$5x10^{-10}$ mbar. l /sec for gasket seal		
Bake Temperature	Valve body			< 150°C
Bake Temperature	Manual and pneumatic actuator			< 80°C
Pressure Range (mbar)	HV	$1x10^{-8}$~1000		
Leakage Rate	UHV	$1x10^{-10}$~1000		
Standard Seal	HV	Gate		Viton O-ring
Standard Seal	HV	Bonnet		Viton O-ring
Standard Seal	UHV	Gate		Viton O-ring
Standard Seal	UHV	Bonnet		Copper Gasket
Actuator	Pneumatic or Manual			
Operating Air Pressure	Φ6 mm,4-6.5 Kg/cm'(overpressure)			
Surface Treatment	Electrochemical Polishing			
Options	A. Position indicator; B. Pneumatic control solenoid valve; C. Roughing port; D. Other material Gate O-ring seal;			
Maximum Differential Pressureagainst Gate	＜1090 mbar			
Maximum Differential Pressure At Opening	ISO100	ISO160	ISO200	ISO250
Maximum Differential Pressure At Opening	＜30 mbr	＜25 mbr	＜20 mbr	＜25 mbr
Pneumatic Valve Open & Close Time /S	ISO100	ISO160	ISO200	ISO250
Pneumatic Valve Open & Close Time /S	1.5/S	2/S	2.5/S	3/S
Valve's Conductance (Molecular Flow)	ISO100	ISO160	ISO200	ISO250
Valve's Conductance (Molecular Flow)	1700 L/S	5100 L/S	12000 L/S	22000 L/S

MAGNOX

General Vacuum Gate Valves Ordering Information
通用真空闸板阀订购信息

66225	-	0400F	-	P	-	FK	-	10	-	01	-	3

产品系列	
66224	联动结构闸阀
66225	滚珠结构闸阀

尺寸规格	
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	ISO250-F
1000N	NW250
1200	CF250

驱动方式	
M	手动
P	气动

密封圈材质	
FK	氟橡胶
FF	全氟醚橡胶

阀体材质	
10	SUS304
40	SUS316

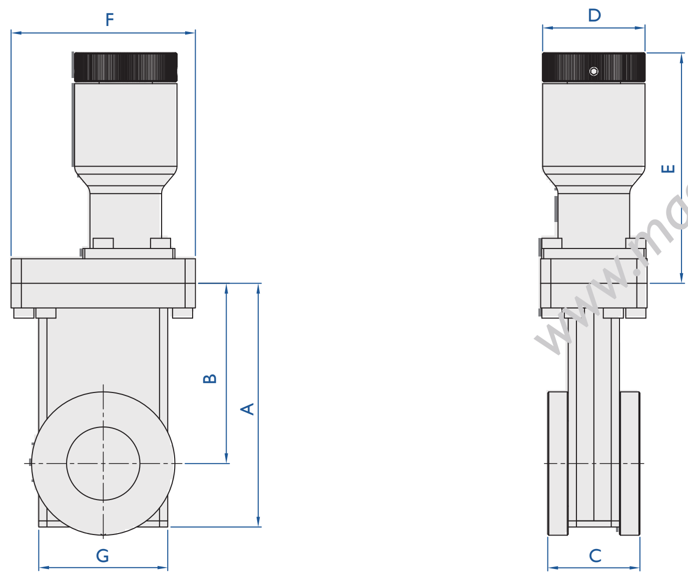
阀盖密封方式	
01	O-Ring
02	无氧铜

电磁阀	
Blank	不选装
1	AC220V
2	AC110V
3	DC24V
4	DC12V

说明

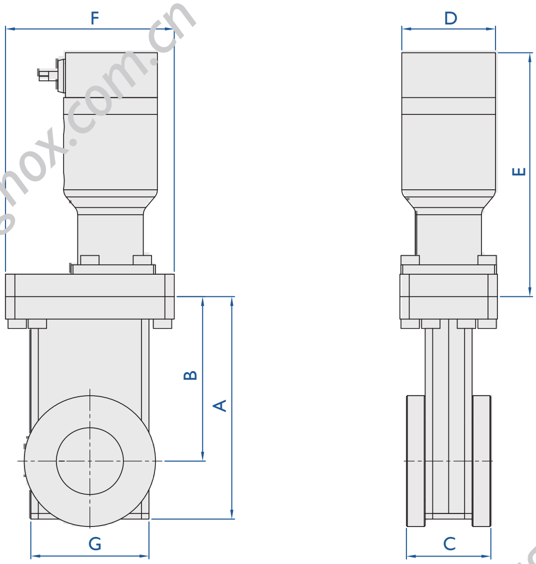
1、型号说明仅用于说明型号组成规则，有些组合实际并不存在；如有疑问请联系迈格诺科销售代表。

KF&CF Flange Gate Valve With Linkage Mechanism



Manual Actuation

Part Number	Flange Size	Dimensions, mm						
		A	B	C	D	E	F	G
66224-0150-M	NW-40	119.00	88.00	50.6	50.00	92.00	88.00	63.0
66224-0275-M	2.75 CF	119.00	88.00	45.4	50.00	92.00	90.00	63.0
66224-0200-M	NW-50	167.00	123.00	59.00	50.00	92.00	123.00	81.0
66224-0338-M	3.38 CF	167.00	123.00	56.00	50.00	92.00	104.00	81.0

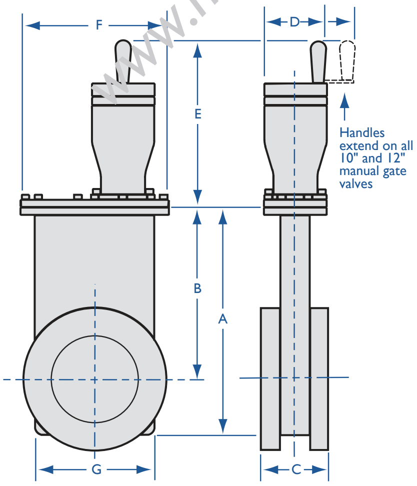


Pneumatic Actuation

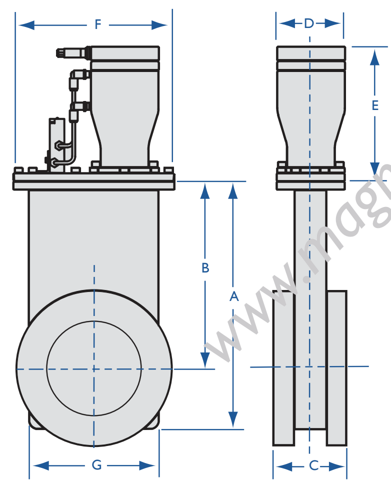
Part Number	Flange Size	Dimensions, mm						
		A	B	C	D	E	F	G
66224-0150-P	NW-40	119.00	88.00	50.6	50.00	134.00	88.00	63.0
66224-0275-P	2.75 CF	119.00	88.00	45.4	50.00	134.00	90.00	63.0
66224-0200-P	NW-50	167.00	123.00	59.00	50.00	134.00	123.00	81.0
66224-0338-P	3.38 CF	167.00	123.00	56.00	50.00	134.00	104.00	81.0

MAGNOX

ISO&CF Flange Gate Valve With Ball Groove Mechanism



Manual Actuation								
Part Number	Flange Size	Dimensions, mm						
		A	B	C	D	E	F	G
66225-0450-M	4.50 CF	207	158	65	50	134	158	107
66225-0250F-M	ISO-63-F	207	158	53	50	134	128	107
66225-0250K-M	ISO-63-K	207	158	[illegible]	50	134	128	107
66225-0600-M	6.00 CF	297	222	69.6	79	177	222	146
66225-0400F-M	ISO-100-F	297	222	53.6	79	177	170	146
66225-0400K-M	ISO-100-K	297	222	100.4	79	177	170	146
66225-0800-M	8.00 CF	407	306.5	79	79	177	306.5	204
66225-0600F-M	ISO-160-F	407	306.5	67	79	177	220	204
66225-0600K-M	ISO-160-K	407	306.5	100.4	79	177	220	204
66225-1000-M	10.00 CF	506	382	84.4	79	177	382	245
66225-0800F-M	ISO-200-F	507	383	67	79	177	267	245
66225-0800K-M	ISO-200-K	507	383	108.00	79	177	267	245



Pneumatic Actuation								
Part Number	Flange Size	Dimensions, mm						
		A	B	C	D	E	F	G
66225-0450-P	4.50 CF	207	158	65	60	134	143	107
66225-0250F-P	ISO-63-F	207	158	53	62	134	128	107
66225-0250K-P	ISO-63-K	207	158	89.30	62	134	128	107
66225-0600-P	6.00 CF	297	222	69.6	75	177	182	146
66225-0400F-P	ISO-100-F	297	222	53.6	75	177	170	146
66225-0400K-P	ISO-100-K	297	222	100.4	75	177	170	146
66225-0800-P	8.00 CF	407	306.5	79	75	177	238	204
66225-0600F-P	ISO-160-F	407	306.5	67	75	177	220	204
66225-0600K-P	ISO-160-K	407	306.5	100.40	75	177	220	204
66225-1000-P	10.00 CF	506	382	84.4	75	177	282	245
66225-0800F-P	ISO-200-F	507	383	67	75	177	267	245
66225-0800K-P	ISO-200-K	507	383	108.00	75	177	267	245

MAGNOX

Aluminum Gate Valves
铝合金真空闸阀

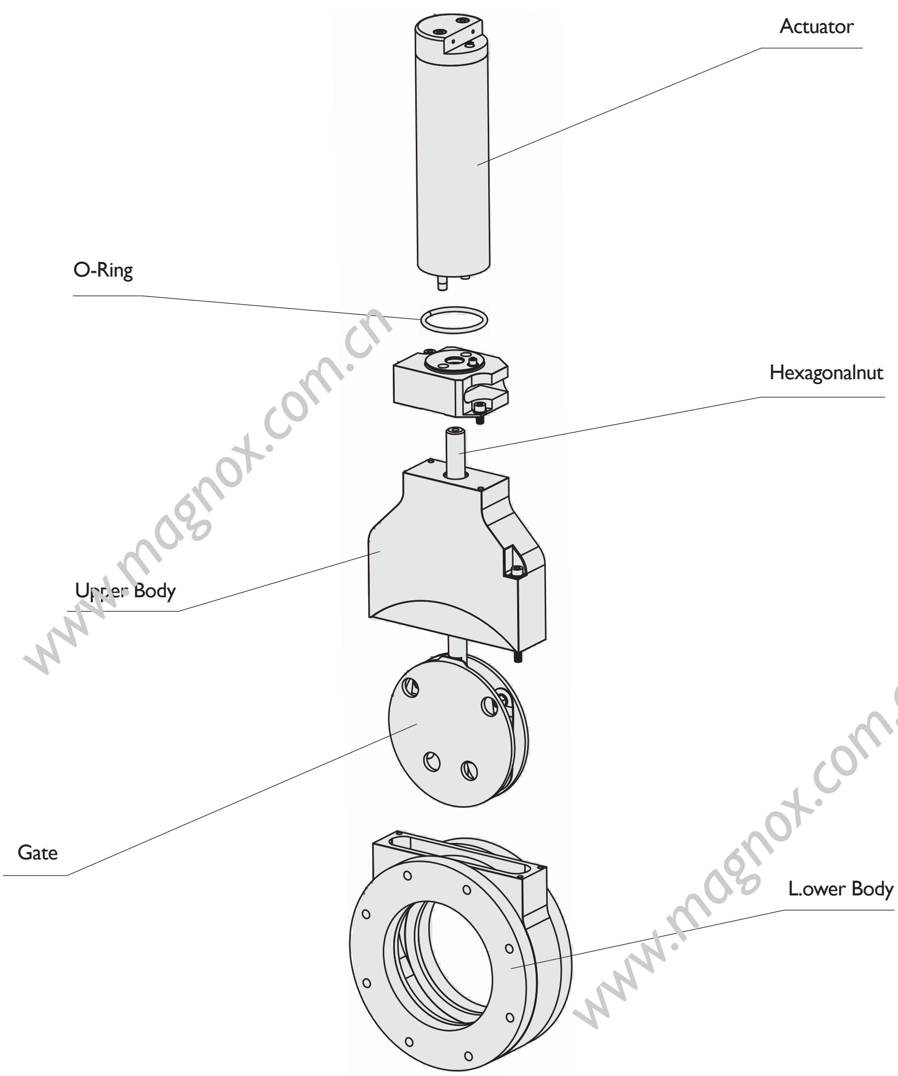
With a robust design and direct mounting option, as well as reduced and easy maintenance due to its split body, Easily meets all standard requirements.Various design options in actuation, flange connections or additional vacuum ports make it easy to integrate in any vacuum application.

Standard options for flange connectors are ISO-F . Customer-specific flanges can be integrated, as well as special features, e.g. a shutter for laser applications (as gate without seal).

The standard gate sealing is provided by an O-ring seal in FKM and other sealing materials are available on request.

Features:

- Reliable, proven design
- Mechanically locked in closing position
- Reliable performance
- Low cost of ownership
- Free of lubricants
- Split body for easy cleaning



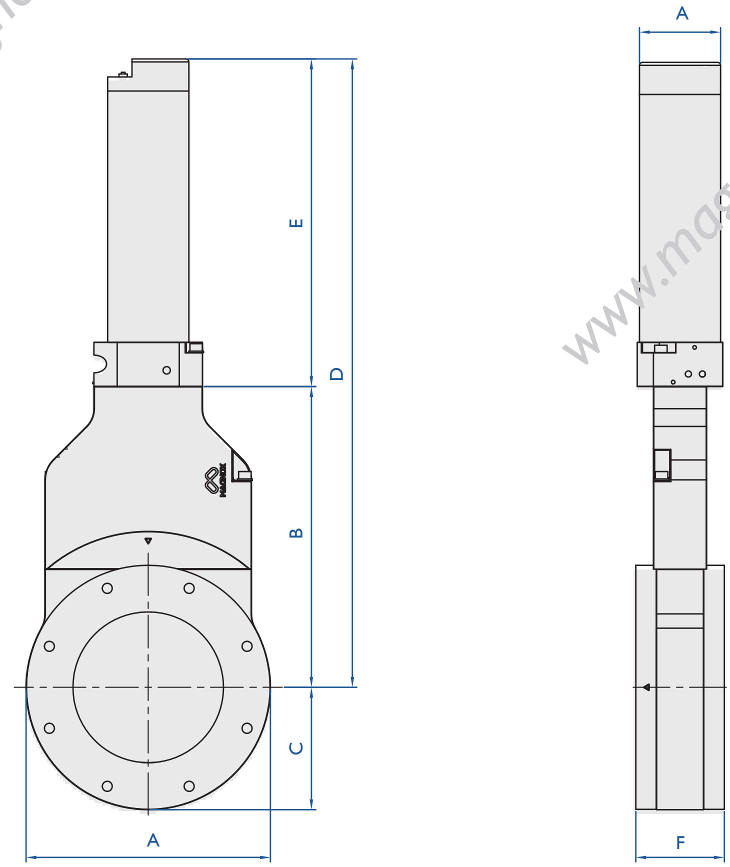
MAGNOX

Technical Data For Aluminum Vacuum Gate Valves

真空铝质闸阀技术参数

Item Type	Technical Data			
Material	Body	EN-AW-6061		
	Cariage	EN-AW-6061		
	Gate	304SS		
Cycle Life	size under 4"(HV)	200000		
	size above 4"(HV)	100000		
Leakage Rate	< 1.0×10^{-9} mbar.l /sec for O-ring sea			
Bake Temperature	Valve body	< 150°C		
	Manual and pneumatic actuator	< 80°C		
Pressure Range (mbar)	1×10^{-8}~1000			
Standard Seal	Gate	Viton O-ring		
	Bonnet			
Actuator	Pneumatic or Manual			
Operating Air Pressure	Φ6 mm,4-6.5 Kg/cm'(overpressure)			
Surface Treatment	Hard Anodized Color			
Options	A: Other Material Gate O-ring Seal ; B : Other Solenoid Voltage(Standard 24V DC)			
Maximum Differential Pressureagainst Gate	＜1600 mbar			
Maximum Differential Pressure At Opening	＜30 mbr			
Pneumatic Valve Open & Close Time /S	ISO80	ISO100	ISO160	ISO200
	1.7/S	2/S	2/S	3/S
Valve's Conductance (Molecular Flow)	ISO80	ISO100	ISO160	ISO200
	1000 L/S	2000 L/S	6000 L/S	12000 L/S

Vacuum Gate Valves



Aluminum Vacuum Gate Valves								
Part Number	**Flange Size**	**Dimensions, mm**						
		A	**B**	**C**	**D**	**E**	**F**	**G**
66226-0250	ISO63-F	145.60	155.50	73.00	339.40	183.90	60.00	55.00
66226-0300	ISO80-F	160.00	176.00	80.00	379.00	203.00	60.00	55.00
66226-0400	ISO100-F	203.00	203.50	82.50	422.90	219.40	60.00	55.00

MAGNOX

Vent Valve For Bellow Seal

波纹管密封放气阀

Vent Valves are typically used to introduce air in to the vacuum chamber and bring the system up to flange for connection to the vacuum system, are manually operated, and made of stainless steal.

Specifications

Flanges: NW\CF

Valves: Bellow Valve

Connection Type: Tube\LOK\VCR

Gasket: Copper\FKM

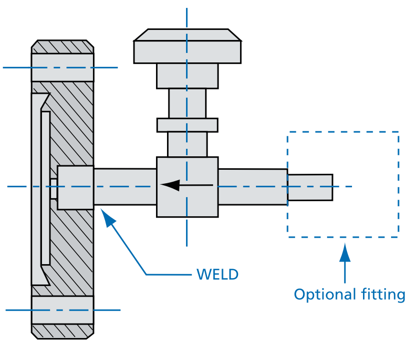
Vacuum Range: ≥1*10^{-13} mbar-UHV

≥1*10^{-8} mbar-HV

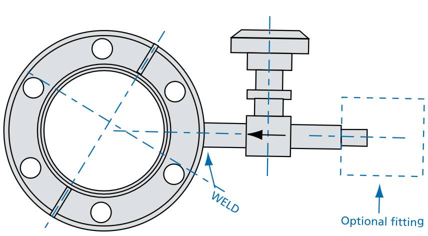
Temperature Range

Metal Seal: -200°C To 450°C

Elastomer Seal: -20°C To 150°C



Part Number	Dimensions, mm		
	Figure	End	D
66217-01334VM	CF 1.33	1/4" MVCR	150mm&OPTION
66217-02754VM	CF 2.75	1/4" MVCR	150mm&OPTION
66217-01334VF	CF 1.33	1/4" FVCR	150mm&OPTION
66217-02754VF	CF 2.75	1/4" FVCR	150mm&OPTION
66217-01334SW	CF 1.33	1/4" LOK	150mm&OPTION
66217-02754SW	CF 2.75	1/4" LOK	150mm&OPTION
66217-01334TW	CF 1.33	1/4" TUBE	150mm&OPTION
66217-02754TW	CF 2.75	1/4" TUBE	150mm&OPTION
66217-00754VM	KF 16	1/4" MVCR	150mm&OPTION
66217-01004VM	KF 25	1/4" MVCR	150mm&OPTION
66217-00754VF	KF 16	1/4" FVCE	150mm&OPTION
66217-01004VF	KF 25	1/4" FVCR	150mm&OPTION
66217-00754SW	KF 16	1/4" LOK	150mm&OPTION
66217-01004SW	KF 25	1/4" LOK	150mm&OPTION
66217-00754TW	KF 16	1/4" TUBE	150mm&OPTION
66217-01004TW	KF 25	1/4" TUBE	150mm&OPTION

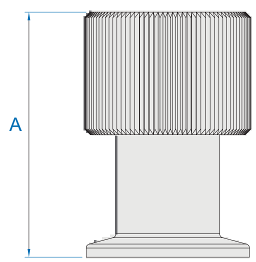


Part Number	Dimensions, mm		
	Figure	End	D
66218-01334VM	CF 1.33	1/4" MVCR	150mm&OPTION
66218-02754VM	CF 2.75	1/4" MVCR	150mm&OPTION
66218-01334VF	CF 1.33	1/4" FVCR	150mm&OPTION
66218-02754VF	CF 2.75	1/4" FVCR	150mm&OPTION
66218-01334SW	CF 1.33	1/4" LOK	150mm&OPTION
66218-02754SW	CF 2.75	1/4" LOK	150mm&OPTION
66218-01334TW	CF 1.33	1/4" TUBE	150mm&OPTION
66218-02754TW	CF 2.75	1/4" TUBE	150mm&OPTION

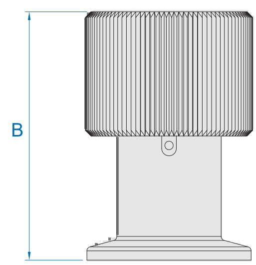
Vent Valve For Poppet Seal
提升机构放气阀

Specifications

Body:	304SS
O-ring seal:	Viton
Maximum leak rate across body:	less than1 x 10 -7 mbar.ls-1
Maximum leak rate across valve seat:	less than1 x 10 -7 mbar.ls-1
Weight:	100 grams
Flanges:	NW16/NW25
Sutitable for:	Pipeline mounting.



CLOSED



OPEN

Part Number	Figure size	Dimensions, mm	
		A	B
66216-0075	KF16	38.65	46.05
66216-0100	KF25	38.65	46.05

All Metal Bakeable Compact Manual Angle Valve

MAGNOX

Product Description
产品描述

MAGNOX bakeable all-metal angle and in-ine valves are designed for use in ultrahigh vacuum are designed for use in ultrahigh vacuum environments where elevated temperatures preclude the use of elastomers and low temperature gasket metals.
These valves provide reliable high temperature seals from atmospheric pressures to below 10^{-11} mbar.

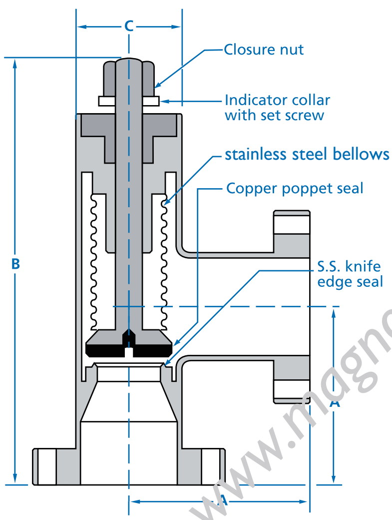
When operated at ambient temperatures, all-metal valves provide hundreds of leak free cycles between routine poppet gasket replacements. In high temperature applications, life cycles are inversely proportional to the bakeout temperatures. When operated at the maximum bake out temperature of 450°C, the poppet seal gasket life is reduced to approximately 50 open/close cycles.

Features

- UHV-compatible to $x10^{-11}$ mbar
- Manual actuation
- Hundreds of seal cycles per gasket
- Replaceable OFE copper poppet gasket
- High temperature service to 450°C
- 300 Series stainless steel construction
- Stainless steel bellows sealed actuator
- High conductance design

Specifications

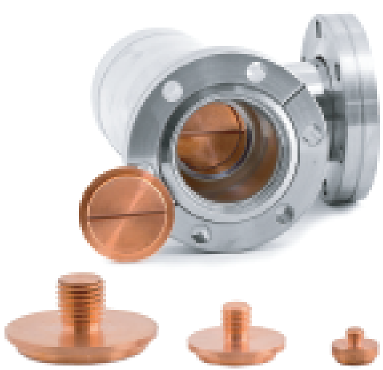
Material	
Flanges	304SS
Valve body	304SS
Bolts	300SS
Gaskets, poppet and bonnet	OFHC Copper
Port fastening	
Bolt type	Socket head bolts
Nut type	Hexagonal nuts
Vacuum	
Range	$1x10^{-11}$ mbar
Leak test	$2x10^{-10}$ mbar litre/sec of He
Temperature range	
Closed/open	300°C/450°C



Bakeable All-metal Valves

Part Number	Flange Size	Dimensions, mm		
		A	(open) B	C
66220-0133	1.33 CF	38	137	38
66220-0275	2.75 CF	52	175	35

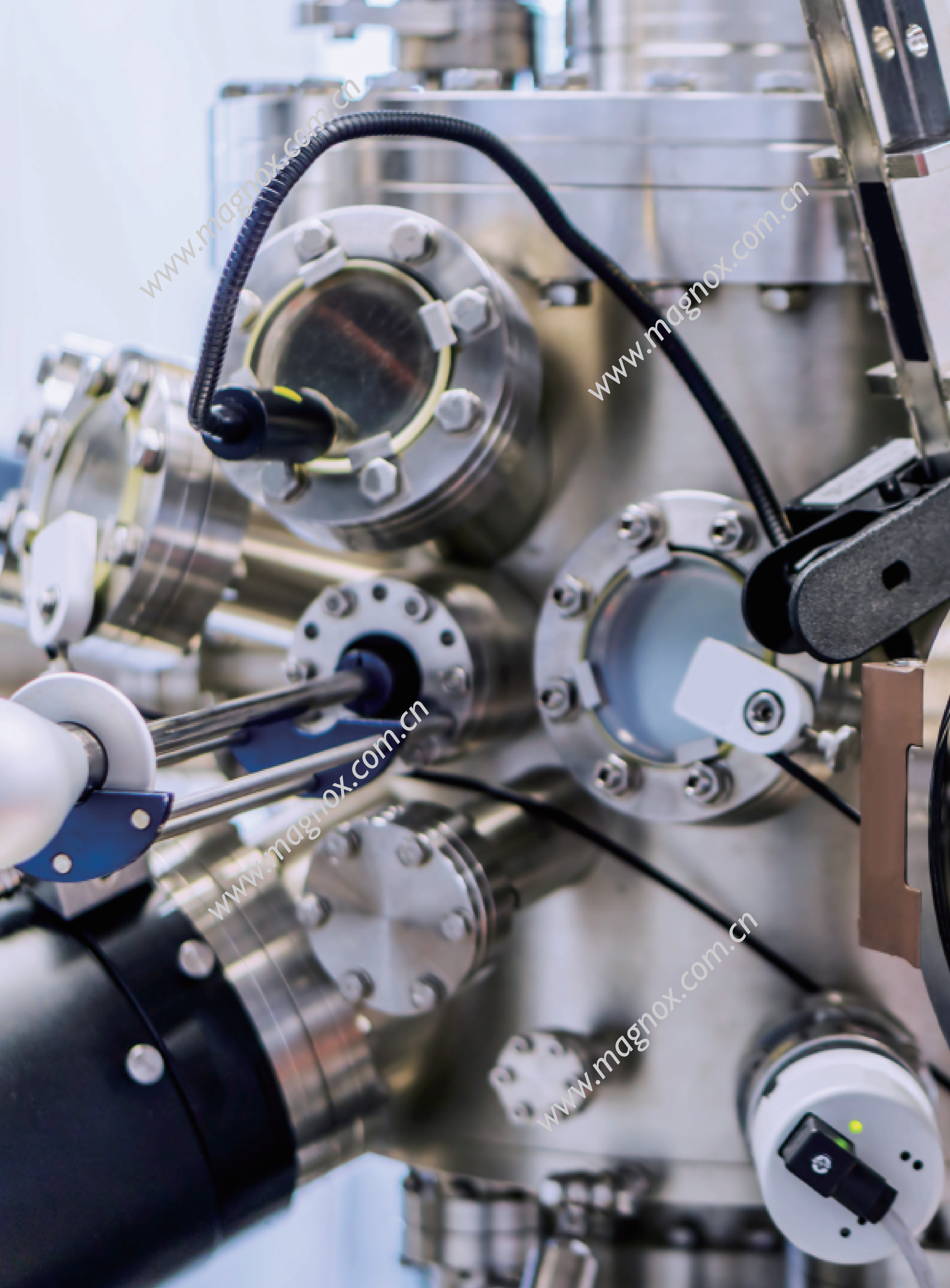
NOTE: Port lengths that match other manufacturers' products are available upon request.



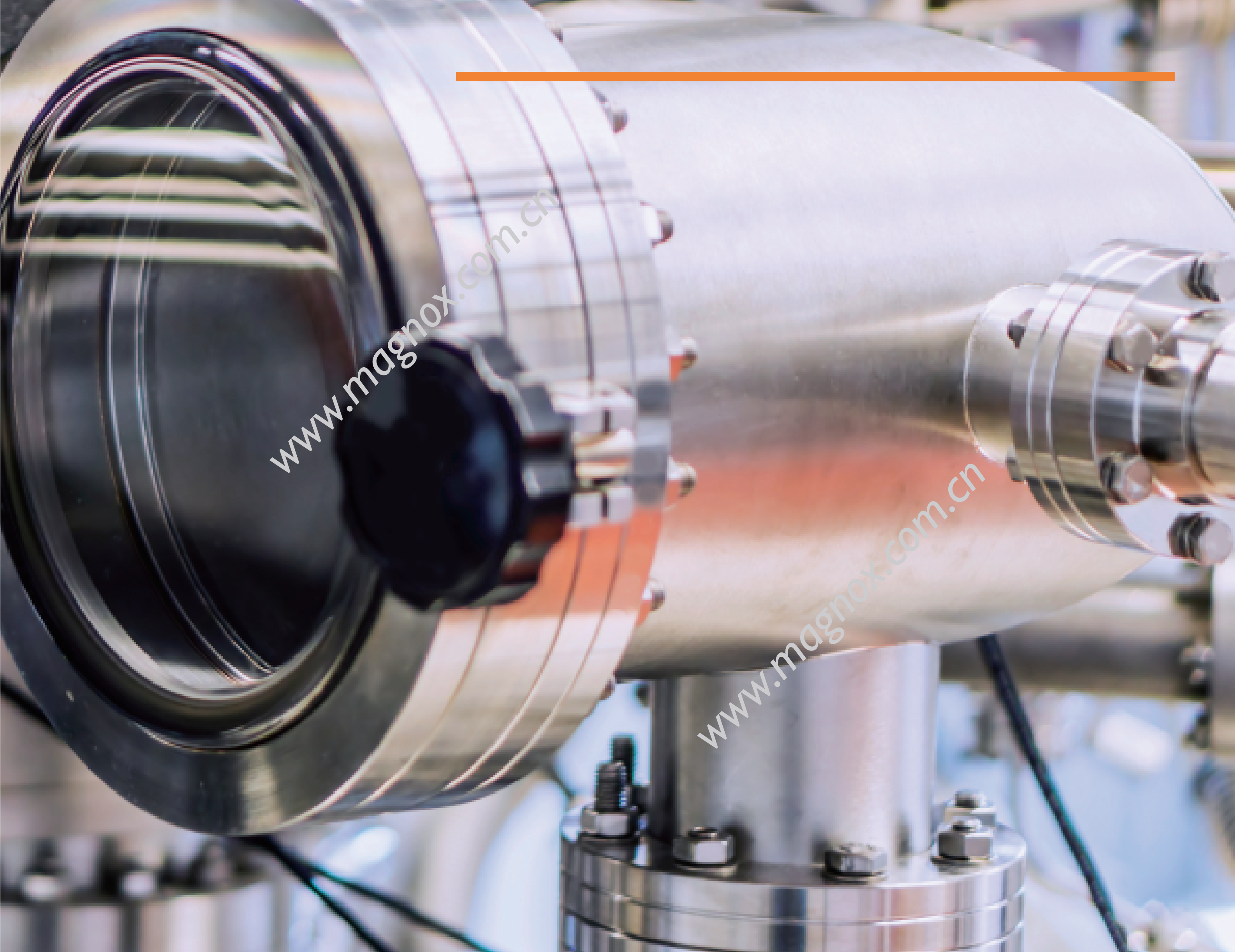
Replacement Seals

Part Number	Flange Size
66219-0133	1.33 CF
66219-0275	2.75 CF

MEMO

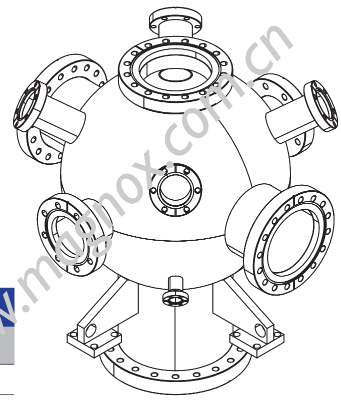


2 Chambers & Weldments



Standard Vacuum Chamber

Standard Spherical Chamber

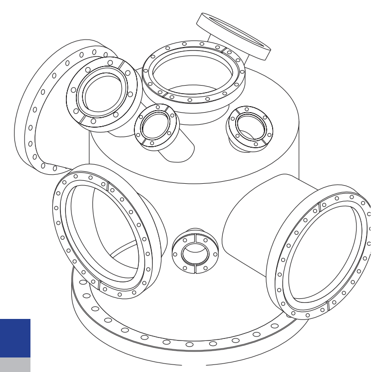


Specifications

- 12" or 16"nominal diameter x 1/8" wall
- 304L stainless steel construction
- Electropolished surface finish for UHV service
- Flange ports are non-rotatable Del Seals with thru bolt holes
- All ports target chamber center
- Bakeable to 400°C
- IFrame mounting brackets

Part Number	Tube Size	Description
66659-1200	12"	12"diaweter Spherical Chamber
66659-1800	18"	18"diaweter Spherigal Chamber

Surface Science Analysis Chamber

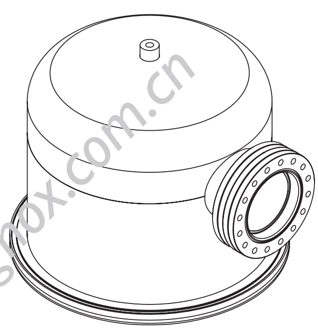


Specifications

- Proven design
- 18 Access Ports
- Del-Seal™ CF metal seal flanges
- Precision component alignment
- All type 304 stainless steel construction
- Bakeable to 450°C
- UHV compatible to 1 x 10^{-11} Torr

Part Number	Tube Size	Description
66660-1400	14"	Surface 5cience Anay5i5 Chamber With 14"female Wire Seal Flange On Port 17
66660-1458	14-5/8"	Surface Science Analysis Chamber With 14-5/8" Del-seal™ Flange On Port17

Stainless Steel Bell Jar



Specifications

- Material
- Bell Jar — 304SS
- Gasket, elastomer — Viton®
- Seal
- Gasket, elastomer — O-ring
- Method — Gravity
- Vacuum Range — 1x10^{-6}Torr
- Temperature Range — Ambient to 150°C

Part Number	Tube Size	Flange O.D.	Description
66661-1200	12"	14.00	Feedthrough Collal
66661-1800	18"	20.00	Feedthrough Collar
66661-2400	24"	26.00	Feedthrough Collar

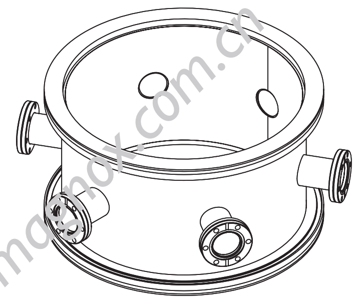
Standard Vacuum Chamber

MAGNOX

Feedthrough Collar Chamber

Specifications

- Material
- Feedthrough Collar — 304SS
- Gasket, elastomer — Viton ®
- Seal
- Gasket, elastomer — O-ring
- Method — Gravity
- Vacuum Range — 1x10^{-6} Torr
- Temperature Range — Ambient to 150°C

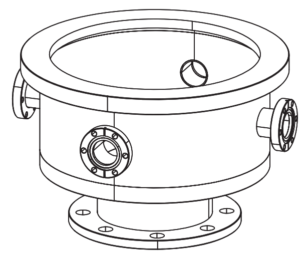


Part Number	Tube Size	Flange O.D.	Description
66662-1200	12"	14.00	Feedthrough Collal
66662-1800	18"	20.00	Feedthrough Collar
66662-2400	24"	26.00	Feedthrough Collar

Feedthrough Collar Chamber

Specifications

- Material
- Feedthrough Collar — 304SS
- Gasket, elastomer — Viton ®
- Seal
- Gasket, elastomer — O-ring
- Method — Gravity
- Vacuum Range — 1x10^{-6} Torr
- Temperature Range — Ambient to 150°C

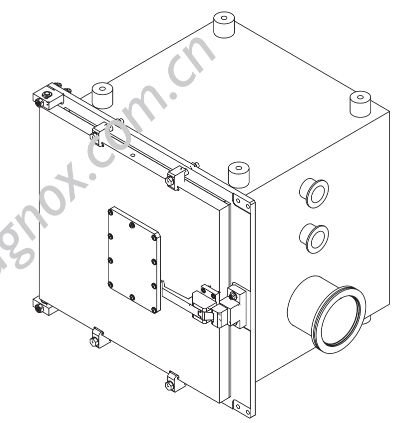


Part Number	Tube Size	Flange O.D.	Description
66663-1200	12"	14.00	Baseplate and Base Well
66663-1800	18"	20.00	Baseplate and Base Well
66663-2400	24"	26.00	Baseplate and Base Well

Box Chambers With Aluminum Doors

Specifications

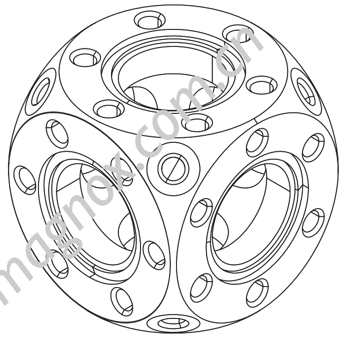
- Versatile Chamber with FKM O-ring sealed door.
  MAGNOX's Box Chambers can be used for many applications
- including tribology, degassing, atmospheric testing,
  thin film deposition and space simulation.
- Standard Features:
- Chamber Body Manufactured from 304 Stainless Steel Plate
- Chamber Door Manufacturedfrom 6061-T6 AJuminum Plate
- Door Sealed Via Dovetail Groove & O-Ring, Includes Rectangular viewportWith Safety Cover
- Capable of Reaching High Vacuum (HV) Levels



Part Number	Tube Size	Description
66664-1200	12"	12"BOX CHAMBER
66664-1800	18"	16"BOX CHAMBER
66664-2400	24"	24"BOX CHAMBER
66664-3000	30"	30"BOX CHAMBER
66664-3600	36"	36"BOX CHAMBER

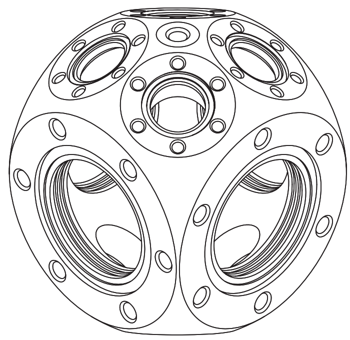
Standard Vacuum Chamber

UHV微型真空室



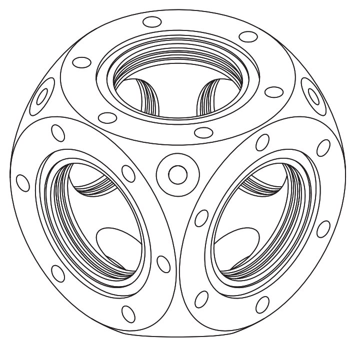
- UHV miniature vacuum chamber.
- Part No.:66651-A6
- 6*CF16-mulit-port chamber
- (8)External tapped holes for system mounting
- Spherical ID:1.0"(27.94mm)
- Internal volume:16 cc
- Weight: 0.15 kg
- Non-standard customization is acceptable.
- For more information, visit the website or contact sales engineer.

UHV微型真空室



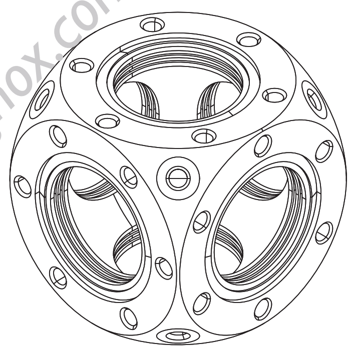
- UHV miniature vacuum chamber.
- Part No.:66651-A8C4
- Allemale configuration 2 includes 4*CF35 and 8*CF16
- Grabber Grooves for internal mounts on Cf35
- Spherical ID: 2.60"(66.04mm)
- Internal volume: 211 Cc
- Weight: 1.29 kg
- Non-standard customization is acceptable.
- For more informalion,visit the website or contacl sales engineer.

UHV微型真空室



- UHV miniature vacuum chamber
- Part No.:66651-A4C5
- Alternate configuration 1 includes 5*CF35 and 4*CF16
- Grabber Grooves for internal mounts on Cf35
- Spherical ID: 2.60"(66.04mm)
- Internal volume: 203 cc
- Weight: 1.16 kg
- Non-standard customization is acceptable.
- For more information,visit the website or contact sales engineer.

UHV微型真空室



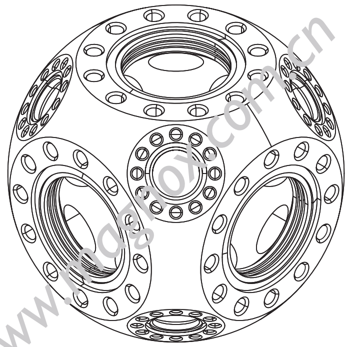
- UHV miniature vacuum charriber
- Part No.:66651-C6
- 6*CF35
- Grabber Grooves for interrial mounts on CF35
- (8)External tapped holes for system mounting
- Spherical ID: 66.04mm
- Internal volume: 195 cc
- Weight: 1.04 kg
- Non-standard customnization is acceptable.
- For more infomalion,visit the website or contacl sales engineer.

Standard Vacuum Chamber

MAGNOX

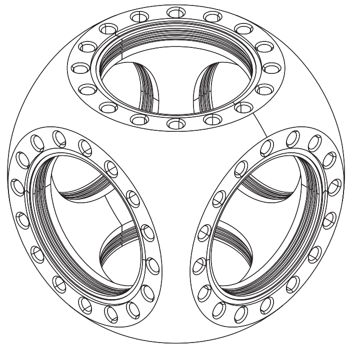
UHV微型真空室

- UHV miniature vacuum chamber.
- Part No.:66651-C6A8
- Expanded version includes 6*CF35 and 8* CF16
- Grabber Grooves for internal mounts on CF35
- Spherical ID:3.30(83.82mm)
- Internal volume:397 cc
- Weight: 2.05kg
- Non-standard customization is acceptable.
- For more information, visit the website or contact sales engineer



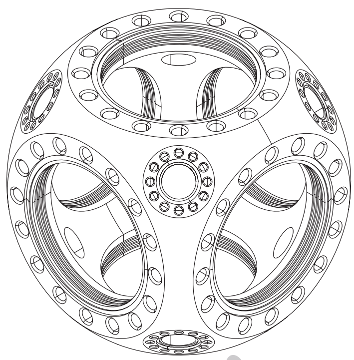
UHV微型真空室

- UHV miniature vacuum chamber
- Part No.:66651-E6
- 6*CF63
- Grabber Grooves for internal mounts on CF63
- Spherical ID:4.80"(121.91mm)
- Internal volume: 2111.145 cc
- Weight: 4.18 kg
- Non-standard customization is acceptable.
- For more information,visit the website or contact sales engineer.



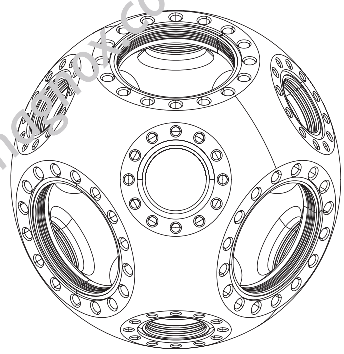
UHV微型真空室

- UHV vacuumn chamber
- Part No.:66651-E6A8
- 6*CF63 and 8*CF16
- Grabber Grooves for internal mounts on CF35
- Spherical ID:4.80"(121.92mm)
- Internal volume: 1.174cc
- Weight: 3.81kg
- Non-standard customization is acceptable.
- For more information,visit the website or contact sales engineer.



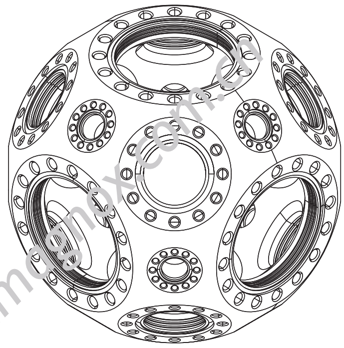
UHV微型真空室

- UHV vacuum chamber.
- Part No.:66651-E6C8
- Expanded version includes 6*CF63 and 8 CF35
- Grabber Grooves for internal mounts on all ports
- SphericalID: 165.1mm
- Internal volume: 2.774 cc
- Weight: 9.71 kg
- Non-standard customization is acceptable
- For more information,visit the website or contact sales engineer.



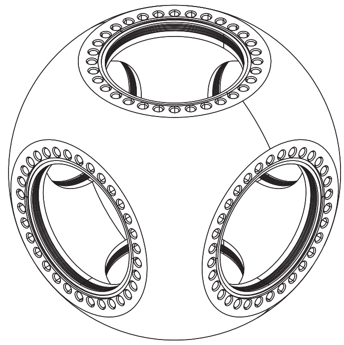
UHV微型真空室

- UHV miniature vacuum chamber.
- Part No.:66651-G6C8A12
- Expanded version includes 6*CF63,8*CF35 and 12*CF16
- Grabber Grooves for internal mounts on Cf35 and larger
- Spherical ID:165.1mm
- Internal volume:2.838 cc
- Non-standard customization is acceptable.
- For more information, visit the website or contact sales engineer.



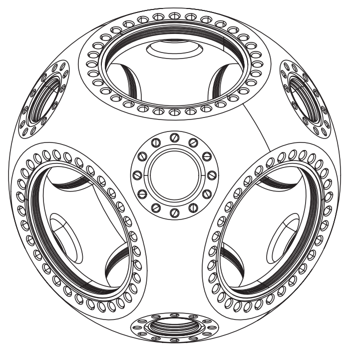
UHV微型真空室

- UHV minialure vacuum chamber.
- Part No.:66651-G6
- Version includes 6*CF100
- Grabber Grooves for inlernal mounts on Cf100
- Spherical ID:8.4"(213.36mm)
- Internal volume: 5.512 cc
- Weighl: 18.97 kg
- Non-standard customization is acceptable.
- For more information,visit the website or contact sales engineer.



UHV微型真空室

- UHV miniature vacuum chamber
- Part No.:66651-G6C8
- Version includes 6*CF100 and 8*CF35
- Grabber Grooves for internal mounts on all ports
- Spherical ID: 8.4"(213.36mm)
- Internal volume: 5.714 cc
- Weight: 16.54kg
- Non-standard customization is acceptable.
- For more informalion,visit the website or conlact sales engineer.

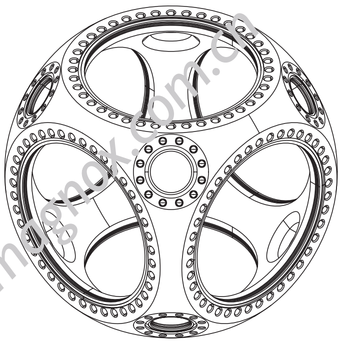


UHV微型真空室

- UHV miniature vacuurn chamber.
- Part No.:66651-G6C8A24
- Version includes 6*CF100 ,8*CF35 and 24*CF16
- Grabber Grooves for internal mounts on Cf35 and larger
- SphericalID:84"(213,36mm)
- Internal volume: 5.902 c
- Weight: 15.03 kg
- Non-standard customization is acceptable
- For more information,visit the website or contact sales engineer.

Standard Vacuum Chamber

UHV微型真空室



- UHV vacuum chamber.
- Part No.:666511-16C8
- 6*CF160and 8*CF35
- Grabber Grooves for internal mounts on all ports
- SphericalID:20"(259.08mm)
- Internal volume:9057 cc
- Weight: 14.4kg
- Non-standard customization is acceptable
- For more information, visit the website or contact sales engineer.

迈格诺科在真空领域同样拥有绝佳的标准件制造及客制件加工能力，我们专业的设计团队可根据客户的特殊需求依据我们的专业经验及专业的设计软件提供专业构图、定制、组装、测试服务。

MAGNOX also has excellent standard parts manufacturing and customized parts manufacturing capabilities in the vacuum field.
Our professional design team can meet the special needs of customers We can provide professional composition, customization, assemly,testing services with our experience and professional design software.

迈格诺科专业的真空应用技术能满足客户各种不同需求。可提供如高真空 (HV) 和超高真空(UHV) 系统中应用到的球型、方型、圆柱型、钟罩式等各类腔体及相关配套的真空管路、标准管件、阀门等。

The professional vacuum application technology of Magnox can meet various needs of customers. Available in all kinds of chamber such as ball type, square type,cylinder type,bell type,and relevant supporting vacuum pipes, standard pipe fittings, valves etc.in high vacuum(HV) and ultra high vacuum (UHV) systems.

- 国际一线品牌的真空检漏仪，100%氦质谱测漏，确保产品漏率满足设计要求。
  International brands of vacuum leak detector, 100% helium mass spectrometer leak detection, to ensure that the product leakagerate meets the design requirements.
- 非标管路和管道工程的设计、加工制作及现场安装服务。
  Design, fabrication and on site installation service for non-standard pipeline.
- 满足各种形状真空腔体的设计、加工、制作需求。
  Design and manufacture of various vacuum chambers.
- 为客户提供设计、制造、咨询等全套精密加工技术解决方案。
  Provide customers with a complete set of precise machining technology solutions including design, manufacturing, consulting, etc.
- 完善的客户产权保密系统，确保客户的知识产权不被外泄。
  Complete customer property confidentiality system to ensure that the customer's intellectual property rights are not disclosed.
- 适用行业:半导体、液晶显示、光伏、OLED、光纤通信、科研、生化医药及食品等行业。
  Applicable industries: semiconductor, LED display, photovoltaic,OLED, optical fiber communication, scientific research, biochemicalmedicine, food and other industries.
- 适应各种不同加工材料需求，如不锈钢、铁合金、铝材、铜材等。
  Adapt to different material request, such as stainless steel, aluminum, copper, etc.

Our engineers use the latest version of 2D and 3D software and accept a variety of file formats.Unless otherwise specified, all our pipe used specifications in inch.Chamber with diameter less or equal to 10 inches will be d manufactured with standard size pipes.Pipe with size above10 inches or any customzied size is manufactured with rolling steel (External diameter and wall thickness of standard pipe are shown on page50 of this book).

我们工程部门使用最新版本的二维和三维软件，可接收多种格式图纸文件。除非另有说明，我们所有的管道均选用英寸规格。直径小于或等于10英寸的定制腔体的主体将由标准管材制造。10英寸以下非标准尺寸及10英寸以上的管道，采用卷圆工艺加工(关于具体的外径壁厚参数可参见本书43页)

Flanges assembly welding. Such as no special requirements. default across CF flanges bot hole Angle on the vertical centre ine. and CF flange leak test slot vertically,in figure 1, In addition, all the flange sealing surface with their vertical pipe axis, as shown in figure 2.

法兰组装焊接时，如无特殊要求，CF法兰螺栓孔角度默认跨在垂直中心线上，且CF法兰泄漏测试槽垂直放置，如图1所示。此外，所有法兰密封面与它们的配合管轴线垂直，如图2所示。

Figure 1

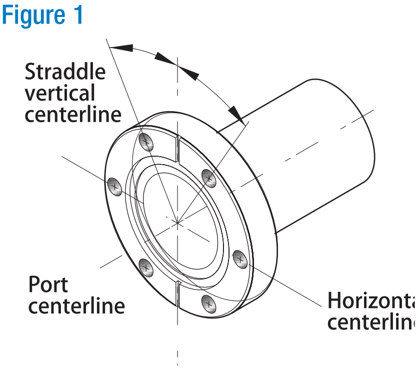
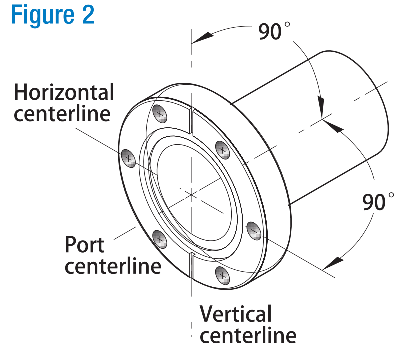


Figure 2



Chamber Wall Thickness

Chamber Diameter	Wall Thickness
≤10.00	.120
＞10.00 but ＜ 24.00	.188
≥10.00	.250

Please note that these wall thicknesses are given as reference only.Actual thicknesses may vary according to a chambers overall design inch the size and quantity of ports being fitted. Contact magnox technical sales engineers for more details.

Unless otherwise stated,the tolerance standard of our machined products is GB/T 1804-2016.the tolerance standard of welded products is IS013920, and the Angle tolerance of cavity flange port is 1.0 by default.

除另有说明，我们机械加工产品执行公差标准为GB/T1804-2016.焊接产品执行公差标准为IS013920,腔体法兰端口角度公差默认为±1.0° 。

For batch products, we sample the number of samples according to GB/T2 828.1-2003 standard.Because of the use of different standards the processing cycle of the product, processing technology, processing costs are diferent. We suggest that no matter what standard is used. please be sure to fully discuss with our sales engineer on feasibility. cost budaet, delivery time and other issues before quoting.so that we can match the best processing solution for you.

对于批量产品，我们抽检样本数量执行GB/T2828.1-2003标准。

因为采用不同的标准，对产品的加工周期、加工工艺，加工成本等均有不同。我们建议无论采用何种标准，在报价前请务必与我们销售工程师就可行性和成本预算、交货周期等问题进行充分讨论，以便我们为您匹配最优的加工方案。

Overview of our capabilities:

High and ultrahigh vacuum chambers are engineered products that require a specialized set of materials and fabrication processes, To help designers and practitioners better understand system specifications, a brief overview of Magnox's capabilities and practices follows:

Materials

Standard materials: Because of its high corrosion resistance, low out gassing rates, wide range of applicable temperatures, machinability, weldability, and relative cost,Magnox's standard material for tube sections, spheres and roll-ups is 304L. stainless steel. Many other materials are available upon request. Magnox routinely works with 304, 316, and 316 stainless steels as wells as 6061 T6 aluminum; 360 free machining brass can also be supplied.

Magnox specifies a magnetic permeability not to exceed 1.02p when ordering raw 304 stainless materials. Welding and machining processes may result in heat affected or cold-worked zones that may increase magnetic permeability in these zones. Minimizing seams, joints, and bends in areas of high magnetic sensitivity should be considered during the design process.For applications that require superior magnetic flux shielding, mumetal can also be supplied.

Flanges: Magnox's flanges are made from specially manufactured raw stock that is designed to maximize the vacuum capabilities of 304 stainless. These processes minimize impurities and inclusions that could adversely impact thestee's ability to maintain vacuum, Grain size, orientation, and density are also engineered to maximize the vacuum performance of the raw stock.

Fabrication

Welding

Magnox uses tungsten inert gas (TIG/GTAW) welding techniques with high purity argon as the backfill/purge gas Both manual and automated orbital welding machines are employed in accordance with good UHV fabrication practices,non-filler material internal fusion weld joints are utilized wherever possible.

In those instances where geometries preclude internal welds, one hundredpercent, 100% full penetration welds are provided.To minimize sources of virtual leaks, external welds are only used when required for structural reinforcement and are limited to stitch, skip, span, or spot weld configurations.

Machining

State-of-the-art, multi-axis,CNC machine centers are at the heart of Magnox's operations our work processes our built upon the dual goals of high quality and rapidturnaround.Our machining coolants are sulphurfree,biodegradable,and recycled.

Surface Finishes

Flanges and machined components (faced,turned or bored)come standard with a 32 micro-inch surface finish.Chambers are internally and externally bead blasted. Electropolishing and manual polishing are additionaloptions.

Cleaning and Packaging

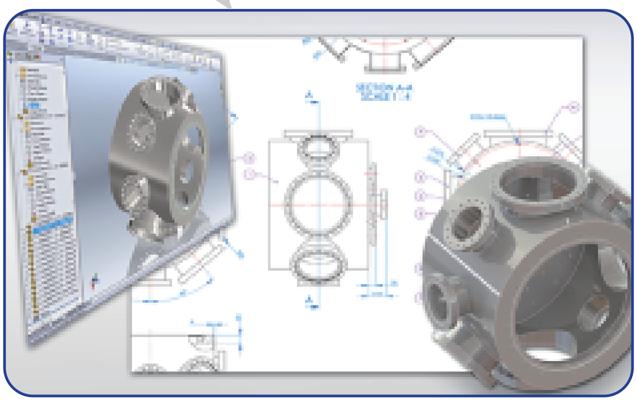
Upon final machining, most components are washed in a heated ultrasonic detergent bath followed by multiple ultrasonic deionized water rinses to remove all residual machining lubricants. After final rinse, parts are blown dry with dry, heated, filtered air and packaged.

After cleaning and testing, flanges and small Components are hermetically sealed in vacuum board packaging and are ready for UHV installation, Larger flanges are covered with a layer of foil and protective plasticshields. Weldments and assemblies are then bagged, bubble-wrapped, and inserted into a shipping container surrounded by void filling "pillow" wrap. Custom crating is available.

Leak Testing and Quality Contro

All weld joints and sealing surfaces are certified with state-of-the-art helium mass spectrometer leak detectors to a maximum rate of 1×10^{-9}std. cchelium. Leak testing is typically conducted in an "outside-in" or tracer-probe configuration. Helium(gas) bag tests are conducted as needed.

The highest standards of quality control inform every aspect of our operational practices. We welcome customer audits. Dimensional checks are confirmed with a controlled Computer Measuring Machine(CMM).Material and CMM certifications can be provided upon request.



How to speciy a custom chamber

There are three basic steps to specifying a custom vacuum chamber:

(1) Specify the main body style and dimensions;
(2) Specify chamber ports (2a) and port mounting configurations (2b);
(3) Specify application specific design considerations.

Spherical

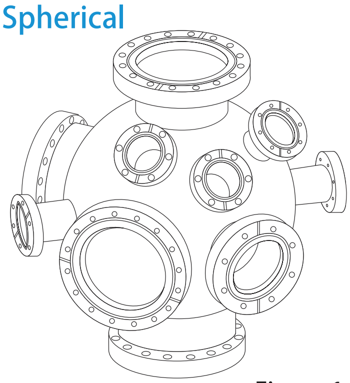


Figure 1

Cylinder

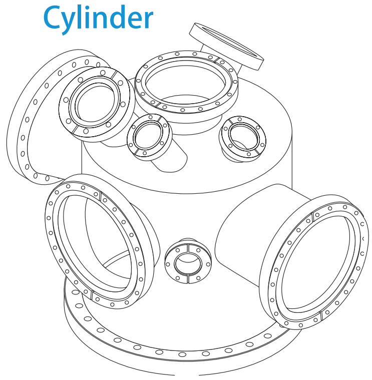


Figure 2

Box

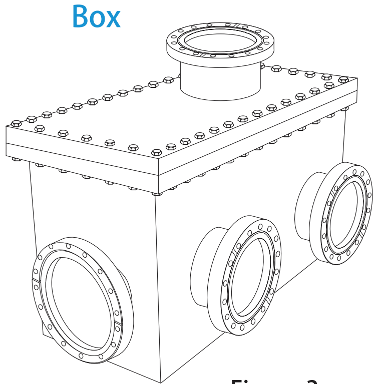


Figure 3

STEP 1

There are essentially three main body styles that are commonly used in vacuum applications today:

1. Spheres and hemispheres: Two hemispheres are welded together to form a spherical chamber body.A spherical configuration provides the highest surface area to volume ratio and is (often) lighter than a cylindrical chamber of similar volume. However, manufacturing considerations often make spherical chambers the least economical solution,

2. Cylinders with hemispherical ends, flat ends, or flanged ends: The body of these chambers is made of either vacuum grade tubing or a custom tubing "rol-up"depending on the diameter required. The lid and base plate are made from a dish head, hemisphere or customized blank flange. Cylindrical chambers are the most commonly chosen vacuum chamber configuration.

3. Rectangular or cubic boxes:These chambers are manufactured with metal plate material that is custom machined and welded to form the chamber body.

Once a main body style is chosen, specify the appropriate overall outer dimension(s).
Figures 1 through 3 show examples of each main body style.

STEP 2a:

Choose the appropriate three-dimensional coordinate system (spherical, modified cylindrical, or cartesian) and specify each port center in coordinates of the chosen system. A complete specification of a port center includes: 1)The center point of the port in the appropriate coordinate system, 2) The focal length, 3) The focal point. Examples of how these coordinate systems are applied to each of the typical main body styles are provided in Figures 4through 6.A complete port specification example for a cylindrical chamber is provided in Figure 7.

Spherical Chamber

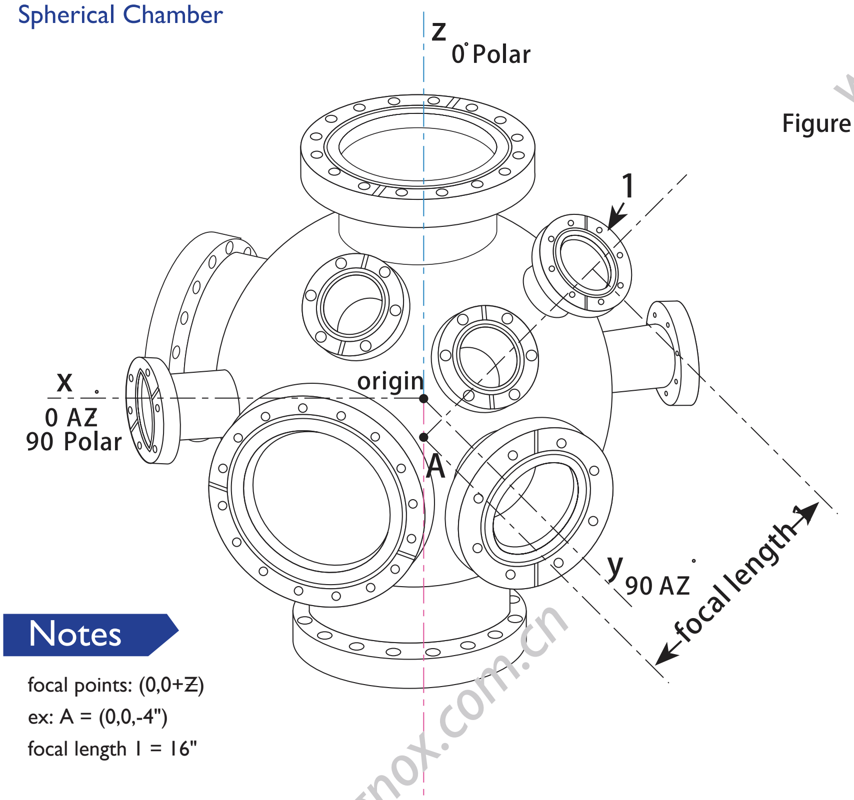


Figure 4

Sample port specification data

Port Number: 1
Flange Size(1):CF275
Flange Style (2):R
Bolt Hole Style (3): H
Mounting Config.(4):T
Tube O.D.(in):1.5
0Tube Thickness (5):Standard
Focal Point:A
Focal Length (in):16.00
Azimuthal Angle:135°
Polar Angle:60°

Notes

focal points: (0,0+Z)
ex: A = (0,0,-4")
focal length l = 16"

Box Chamber

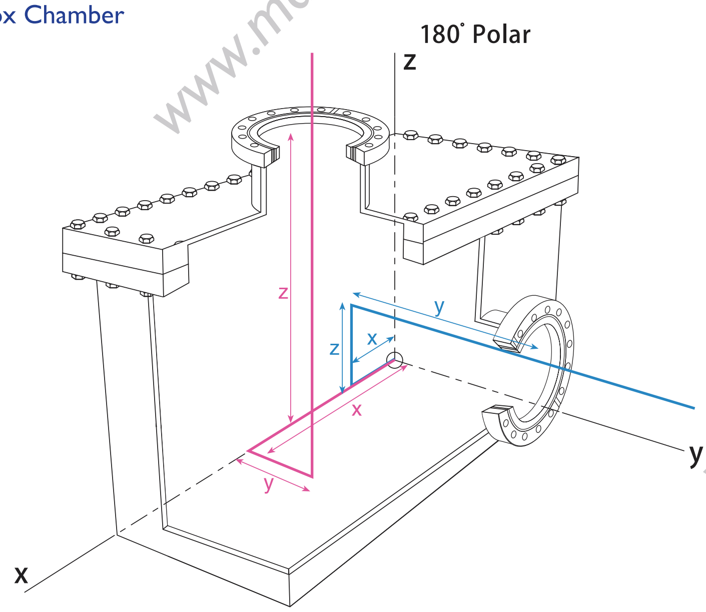


Figure 5

Coordinates of the point P= P(xy,z) specify the center of the flange.

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STEP 2a:

Choose the appropriate three-dimensional coordinate system (spherical, modified cylindrical, or cartesian) and specify each port center in coordinates of the chosen system. A complete specification of a port center includes: 1) The center point of the port in the appropriate coordinate system, 2) The focal length, 3) The focal point. Examples of how these coordinate systems are applied to each of the typical main body styles are provided in Figures 4 through 6. A completes port specification example for a cylindrical chamber is provided in Figure 7.

Cylindrical Chamber:

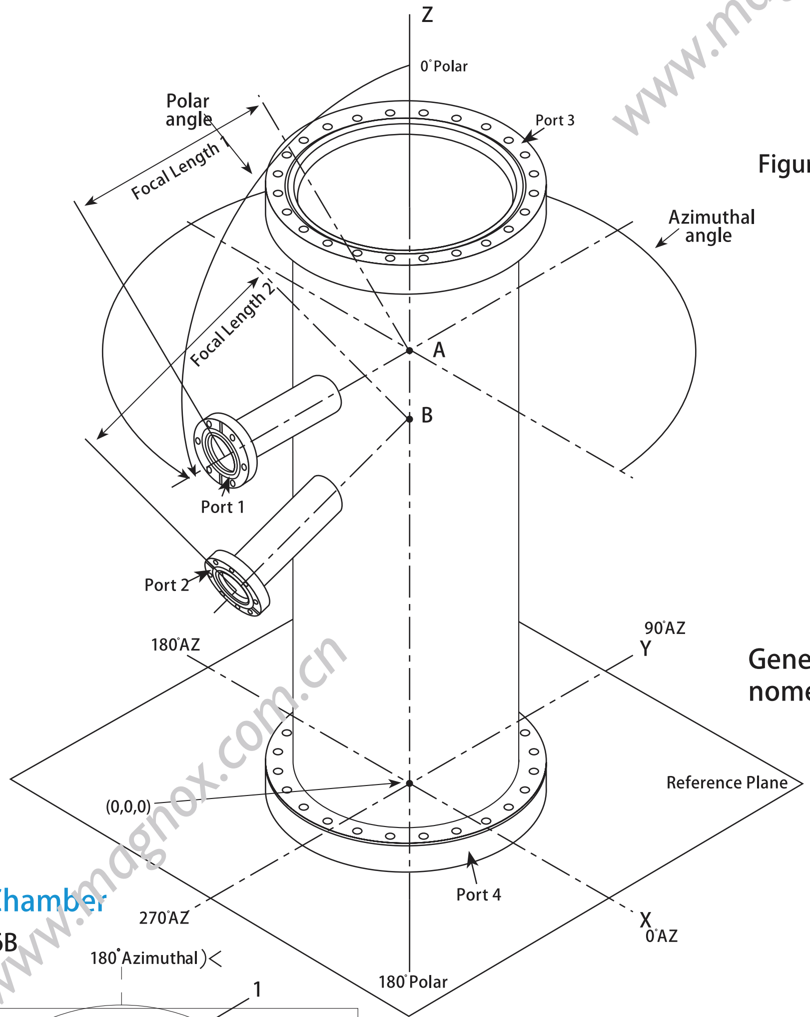


Figure 6A

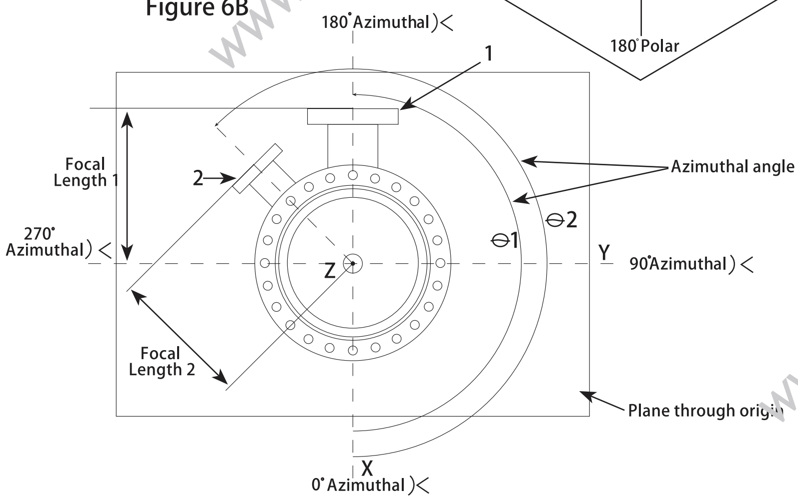
General chamber nomenclature

Notes

focal points: (0,0, Ƶ)
(X=0,Y=0,Ƶ)
examples:
A=(0,0,24")
B=(0,0,20")

Cylindrical Chamber

Figure 6B



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STEP 2a:

Using the conventions provided in this section, steps 2a and 2b have been completed for the seven ports shown on the cylindrical chamber below (Figure 7).

Cylindrical Chamber:

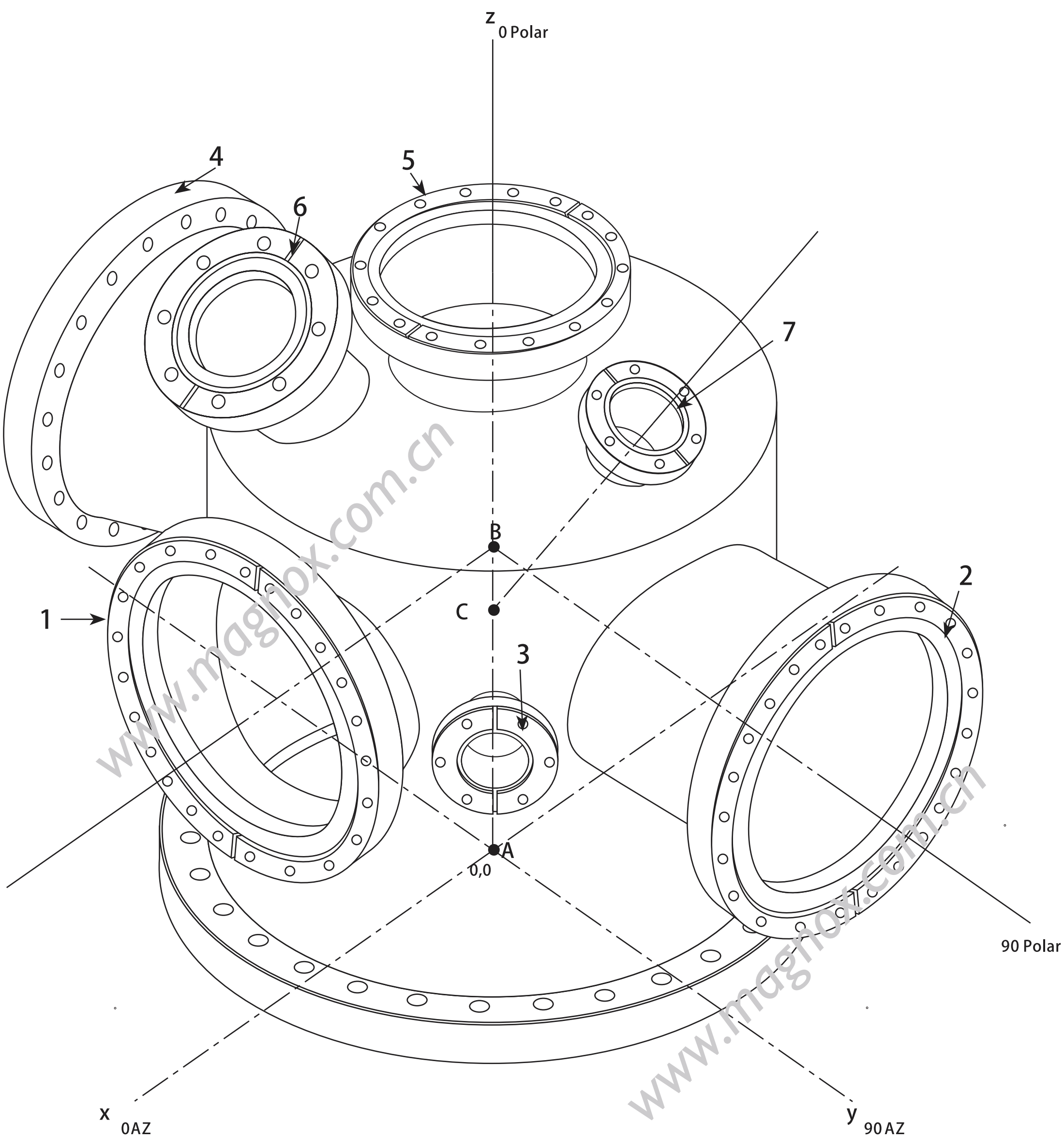
Notes

focal points: (0,0, Z)
examples: "A" 0,0,0
"B" 0,0,10
"C" 0,0,8

Figure 7

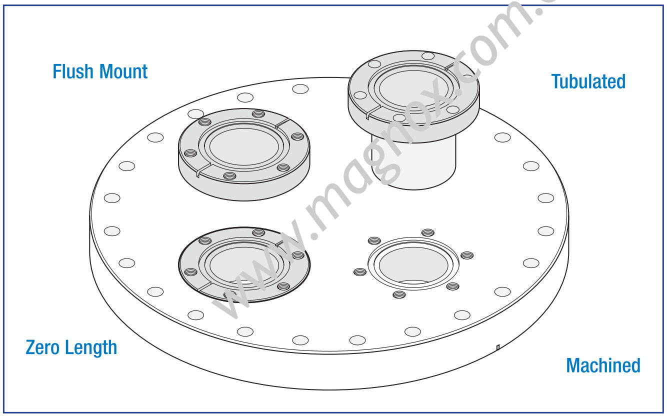
Notes

focal points: (0,0, Z)
examples: "A" 0,0,0
"B" 0,0,10
"C" 0,0,8

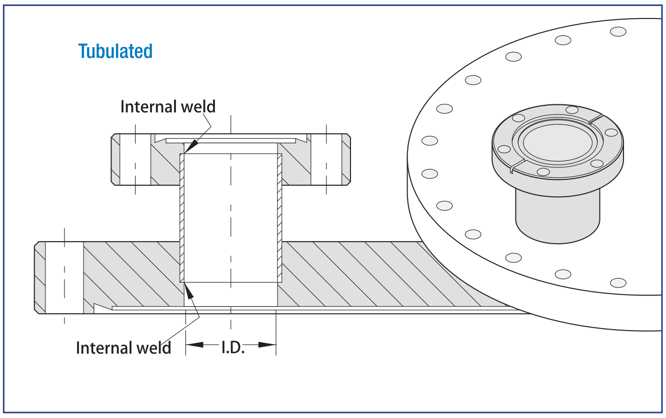


One example of the multiple ways to specify a custom component

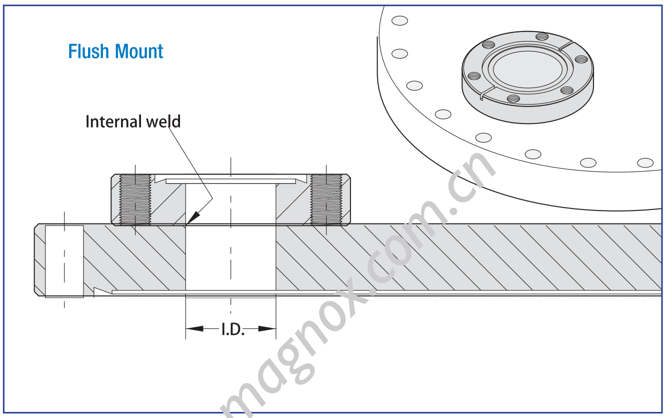
The flange assembly at right depicts four popular methods of installing flanges into a larger flange or plate. Del-Sealm CF metal seal flanges have been used for the purpose of this example. The methods described would apply to most any flange type and configuration. The four methods of construction are referred to as standard tubulated, top flush mounted, zero length recessed and single piece integrally machined, These are given as examples for commonly asked questions. Discussing your application with an Magnox technical sales engineer will help determine the appropriate solution for your application.

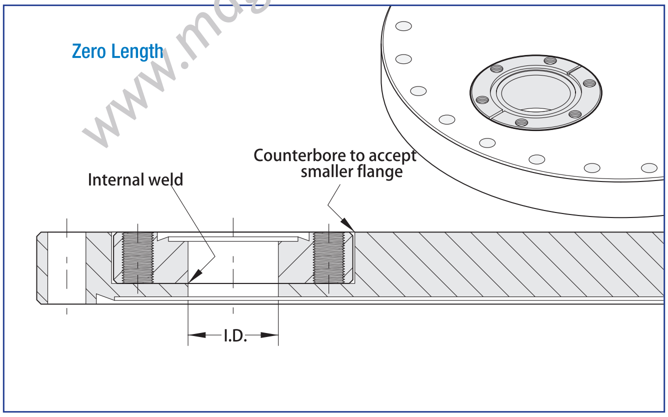


The tubulated method of construction would be one in which a standard or custom half-nipple is welded to the larger flange at the tube end, The larger flange or plate is counter-bored to match the tube's inside and outside diameters. The tube to flange transitions are welded in the same fashion along the bore's inside diameter. This method of construction allows the use of clearance hole, bolt and nut fasteners, and is the only configuration that would allow the use of a rotatable flange.



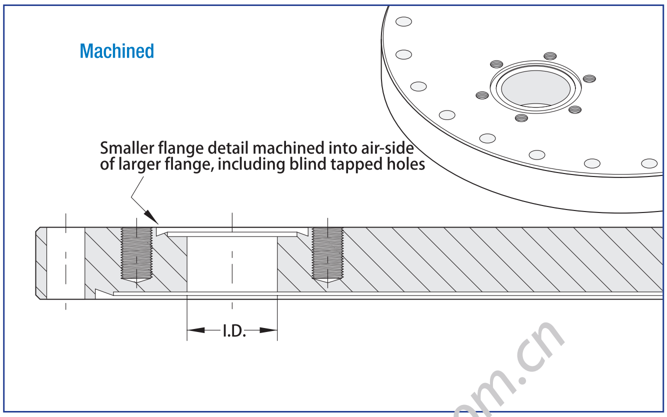
The most economical method of installing a flange would be to use standard off the shelf components requiring the minimum amount of modification and fabrication or in other words a top mounted method.In this method the larger flange or plate is bored to match the bore size of a smaller flange. Both are then joined by fusion welding internally along the interface between the two bored pieces,In some cases, external skip welds are provided for additional mechanical strength.
This is the most economical method of construction.



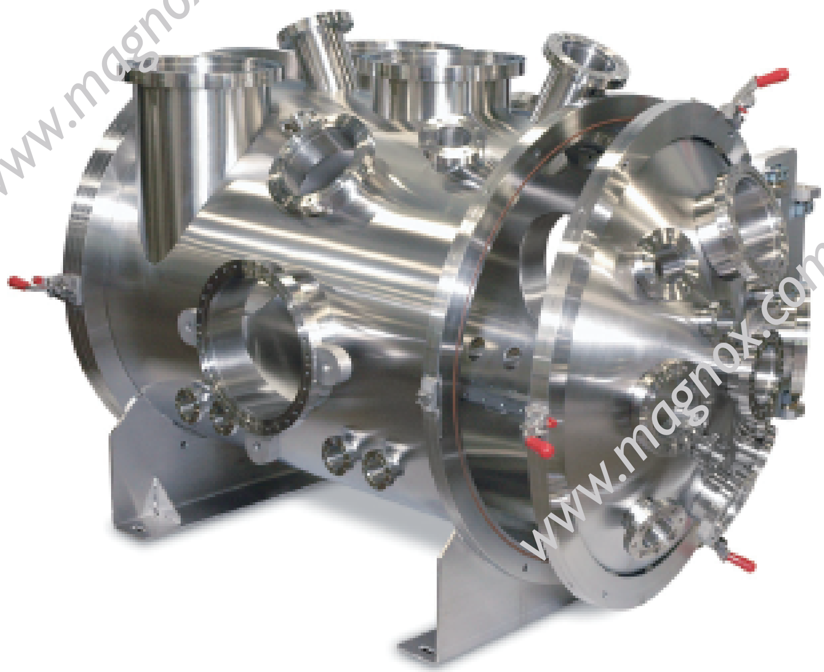


The zero length method of installation is similar to the top mount method with one exception, the larger flange or plate is counter bored to a depth that matches the thickness of the smallerflange. The counter-bore is used to reduce the overall thickness of the completed assembly and thus provides a zero length recessed profile.

The flanges are welded in the same fashion along the bore inside diameter. This approach provides a more aesthetic look at a reasonable cost.



An integrally machined method eliminates all weld joints, but requires the most amount of machining. Special machining steps include the use of blind-tapping for all bolt holes and off-center turning of the knife-edge seal geometry as well as through bore operations. In some instances it may even be desirable to use helical thread inserts, since these would be easy to replace in the event a thread is damaged. Conventional threads would be very difficult to repair. This type of fabrication is the most aesthetic but also the most expensive of the threechoices.



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STEP 3

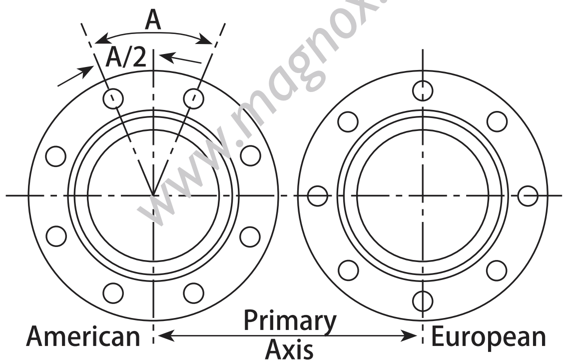
Specify application specific design considerations, A minimum set of criteria are provided here:

a. Material:Specify if other than 304L stainless steel.

b. Main body wall thickness: Specify if known or state"Standard"if Magnox should select the thickness."Standard"if Magnox

c. Bolt hole orientation: Specify, as shown in Figure 7 below, if known or state "standard" if Magnox should select the bolt hole orientation (for non-rotatable flanges). The orientation of leak check grooves on CF flanges should be indicated if critical.

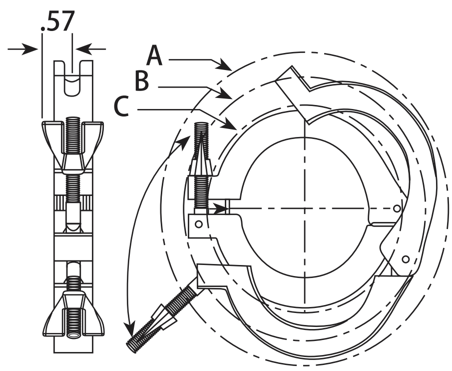
Figure 7



d. Clamp and bolt kit clearances: Be sure that tubulated flange mounts have the minimum clearances as shown in Table C & D below:

Table C -KF Clamp Clearance (in)

Flange Size	Min. Dia. Toinstall A	Max.dia Closed B	Min. Dia. Closed C
KF-10	2.86	2.65	1.75
KF-16	2.86	2.65	1.75
KF-25	3.32	3.00	2.24
KF-40	4.00	3.72	2.90
KF-50	5.45	4.62	3.69



e. Tolerances: Specify if known or state"Standard" if Magnox standard tolerances should be applied. Magnox's standard tolerances are provided in Table E.

Table E General Tolerances (mm)

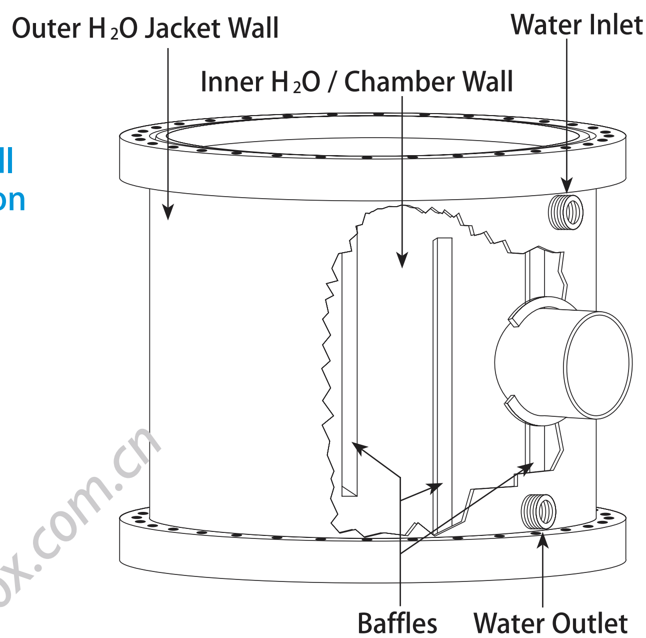
	Dim	>0 ≤6	>6 ≤30	>30 ≤120	>120 ≤400	>400 ≤1000	>1000 ≤2000	>2000 ≤4000
机加工	精	±0.10	±0.10	±0.20	±0.20	±0.30	±0.50	
	普	±0.20	±0.20	±0.50	±0.50	±0.80	±1.20	±0.20
焊接	A	±1.00	±1.00	±1.00	±1.00	±2.00	±2.00	±4.00
	B	±1.00	±1.00	±2.00	±2.00	±3.00	±4.00	±6.00

f.Water-cooled jacketing: Magnox manufactures two styles of water-cooled chambers for high temperature or high heat flux applications:

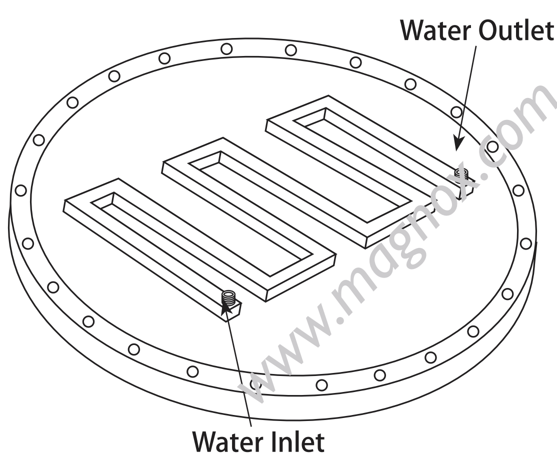
1. Double-Wall Construction: Double-wall construction is most often used in those applications requiring uniform internal chamber temperatures. Typically, double-wall, water-cooled chambers are made with internal baffles that help provide uniform, laminar water circulation.

2. Channel Construction: Channel construction is most often used in those applications requiring localized or targeted cooling. Because it involves a fair amount of hand fitting work to install, channel construction is often more expensive than double-wall construction.

Double Wall Construction



Channel Construction

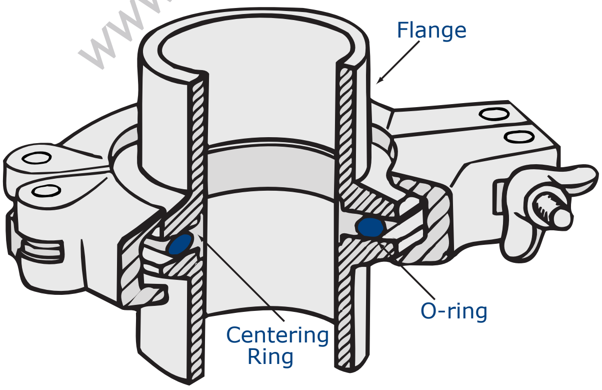


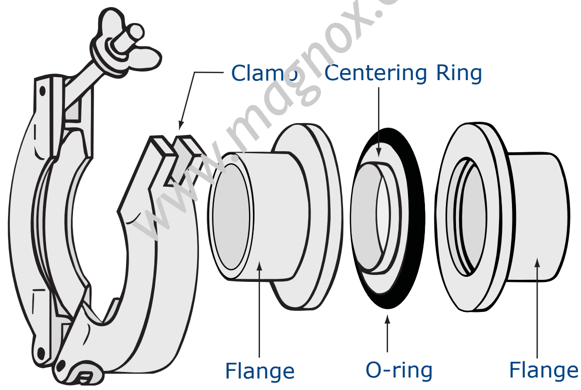
MEMO

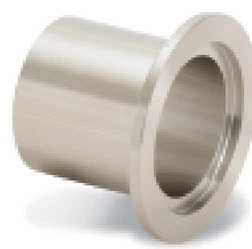
3 Fittings & Flanges

Vacuum Fittings-KF Series

真空配件-KF系列



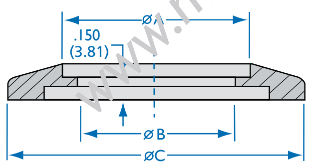




Specifications	
Blanks	:304(other material available upon request)
Flanges	:304(other material available upon request)
Fittings	:304(other material available upon request)
Clamps	:Aluminium
O Ring material	:Viton or NBR
Temperature Range	:150°(Viton)80°(NBR)
Vacuum Rate	:10^{-8} torr

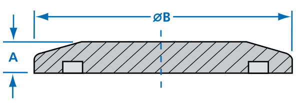
Larger or special size available upon request

Diagram A



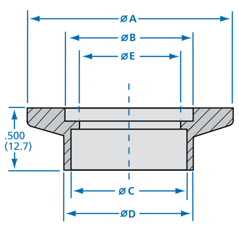
Bored Blank Flanges

Part Number	Flange Size	Dimensions, mm			
		Tube OD	A	B	C
66601-0050	KF10	12.70	12.95	11.46	29.97
66601-0075	KF16	19.05	19.30	17.27	29.97
66601-0100	KF25	25.40	25.65	23.83	40.01
66601-0150	KF40	38.10	38.35	36.53	54.86
66601-0200	KF50	50.80	51.05	49.23	74.93



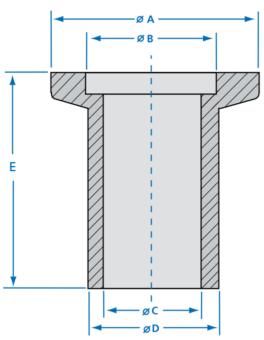
Blank Off Caps

Part Number	Flange Size	Dimensions, mm	
		A	B
66602-0050	KF10	5.08	29.97
66602-0075	KF16	5.08	29.97
66602-0100	KF25	5.08	40.01
66602-0150	KF40	5.08	54.86
66602-0200	KF50	5.08	74.93



NW Socket Weld Flanges

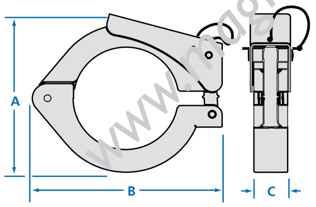
Part Number	Flange Size	Dimensions, mm					
		Tube OD	A	B	C	D	E
66603-0050	KF10	12.70	29.97	12.19	12.95	15.49	-
66603-0075	KF16	19.05	29.97	17.27	19.30	20.27	-
66603-0100	KF25	25.40	40.01	26.19	25.65	28.96	23.83
66603-0150	KF40	38.10	54.86	41.15	38.35	41.66	36.53
66603-0200	KF50	50.80	74.93	52.32	51.05	54.36	49.23



NW Butt Weld Neck Flanges

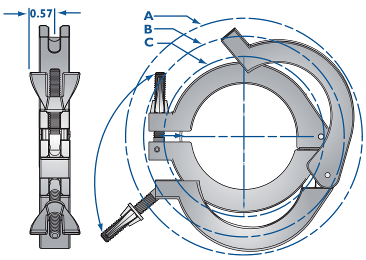
Part Number	Flange Size	Dimensions, mm				
		A	B	C	D	E
66604-0050	KF10	29.97	12.19	9.65	12.70	12.7/20/40
66604-0075	KF16	29.97	17.27	15.88	19.05	12.7/20/40
66604-0100	KF25	40.01	26.19	22.10	25.40	12.7/20/40
66604-0150	KF40	54.86	41.15	34.80	38.10	12.7/20/40
66604-0200	KF50	74.93	52.32	47.50	50.80	12.7/20/40

注：根据需求选择不同的长度，12.7mm物料代码为12；20mm物料代码为20，40mm物料代码为40.
例如若需长度为20mm的接头，物料号则表示为66604-0100-20



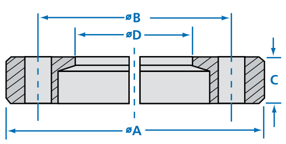
NW Sure Seal Clamps

Part Number	Flange Size	Dimensions, mm		
		A	B	C
66606-0075	KF16	41.00	62.30	16.50
66606-0100	KF25	54.00	72.54	16.50
66606-0150	KF40	69.00	89.70	16.50
66606-0200	KF50	96.11	107.82	21.23



NW Clamp Clearance Details

Part Number	Flange Size	Max.dia To Install A	Max.dia Closed B	Min.dia Closed C
66607-0075	KF10/16	72.64	67.31	44.45
66607-0100	KF25	84.33	76.20	56.90
66607-0150	KF40	101.60	94.49	73.66
66607-0200	KF50	138.43	117.35	93.73



NW Bulkhead Clamps

Part Number	Flange Size	Dimensions, mm				
		A	B	C	Number Of Screws	Through Hole D
66608-0075	KF16	50.80	38.10	9.17	6	22.86
66608-0100	KF25	60.20	48.01	9.83	6	32.00
66608-0150	KF40	74.68	61.98	9.30	6	46.74
66608-0200	KF50	95.25	82.55	10.26	6	59.69

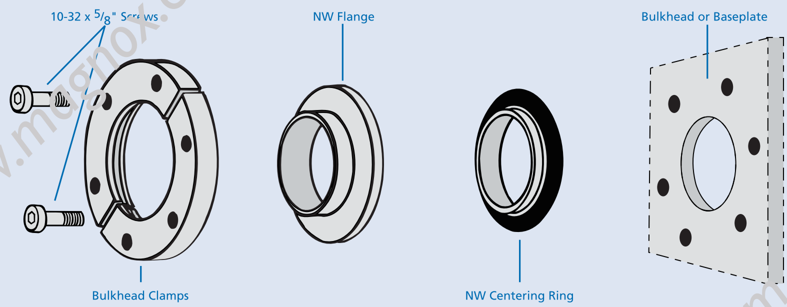
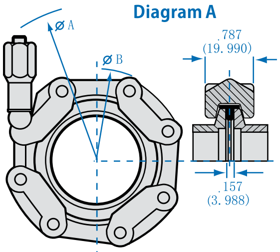


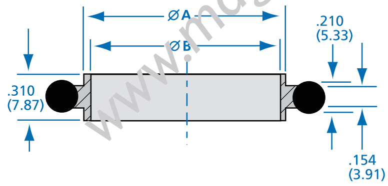
Diagram A



Chain Clamps for NW-16 to 63 Links

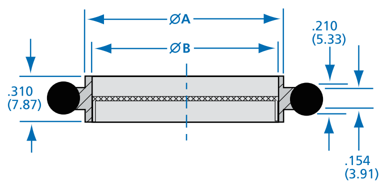
Part Number	Flange Size	Dimensions, mm	
		A	B
66626-0075	KF16	115.06	59.94
66626-0100	KF25	124.97	70.10
66626-0150	KF40	135.13	85.09
66626-0200	KF50	151.89	104.90
66626-0250	KF63	160.02	119.89

注：物料号默认材质为不锈钢304，若需求特氟龙材质，物料后加 -PT；若需求铝材质，物料号加-AL.
如需订购KF25,特氟龙材质的链卡，物料号表示为66626-0100-PT。



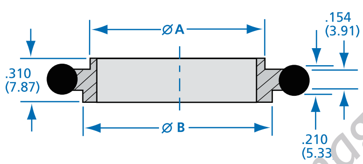
NW Stainless Steel Centering Rings with Viton O-ring

Part Number	Flange Size	O-ring Material	Dimensions, mm	
			A	B
66609-0050	KF10	Viton	12.14	11.58
66609-0075	KF16	Viton	16.99	15.88
66609-0100	KF25	Viton	26.01	24.99
66609-0150	KF40	Viton	41.00	39.88
66609-0200	KF50	Viton	51.99	49.96



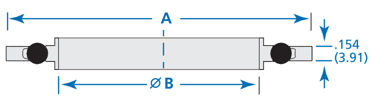
NW Screened Stainless Steel/Centering Rings with Viton O-ring

Part Number	Flange Size	O-ring Material	Dimensions, mm		Mesh
			A	B	
66610-0075	KF16	Viton	16.99	15.88	30
66610-0100	KF25	Viton	26.01	24.99	
66610-0150	KF40	Viton	41.00	39.88	
66610-0200	KF50	Viton	51.99	49.96	



NW Screened Stainless Steel/Centering Rings with Viton O-ring

Part Number	Flange Size	O-ring Material	Dimensions, mm	
			A	B
66611-1016	KF10/16	Viton	12.19	17.02
66611-2025	KF20/25	Viton	22.10	25.91
66611-3240	KF32/40	Viton	34.04	40.89



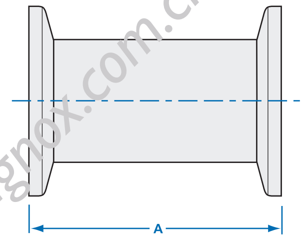
NW Screened Stainless Steel/Centering Rings with Viton O-ring

Part Number	Flange Size	O-ring Material	Dimensions, mm		
			A	B	Maximum Psig
66612-0050	KF16	Viton	31.75	15.88	100
66612-0100	KF25	Viton	42.16	24.99	100
66612-0150	KF40	Viton	57.15	39.88	75
66612-0200	KF50	Viton	69.85	49.96	50

NW Full Nipples

Part Number	Flange Size	Dimensions, mm	
		A	B
66628-0050	KF10	12.70	100/0ption
66628-0075	KF16	19.05	100/0ption
66628-0100	KF25	25.40	100/0pion
66628-0150	KF40	38.10	100/0ption
66628-0200	KF50	50.80	100/0ption

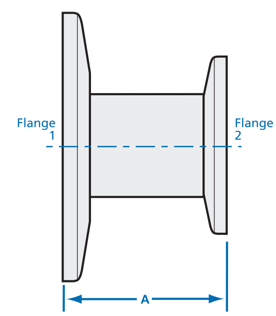
可按照需求定制任重长座。例如，需定制KF25 L=750mm，订购号为66828-0100-0750



NW Reducer Nipples

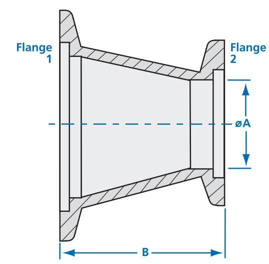
Part Number	Flange Size	Dimensions, mm			
		Flange 1	Flange 2	Tube OD	A
66614-1610	KF16*KF10	NW-16	NW-10	12.70	28
66614-2510	KF25*KF10	NW-25	NW-10	12.70	28
66614-2516	KF25*KF16	NW-25	NW-16	19.05	28
66614-4010	KF40*KF10	NW-40	NW-10	12.70	28
66614-4016	KF40*KF16	NW-40	NW-16	19.05	28
66614-4025	KF40*KF25	NW-40	NW-25	25.40	28
66614-5010	KF50*KF10	NW-50	NW-10	12.70	28
66614-5016	KF50*KF16	NW-50	NW-16	19.05	28
66614-5025	KF50*KF25	NW-50	NW-25	25.40	28
66614-5040	KF50*KF40	NW-50	NW-40	38.10	28

可按照需求定制任意长度。例如，需定制KF25*KF16 L=750MM，订购号为66614-2516-0750



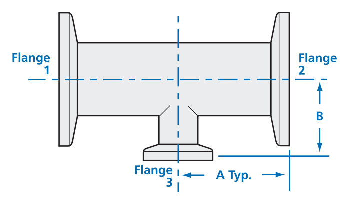
NW Reducer Nipples

Part Number	Flange Size	Dimensions, mm			
		Flange 1	Flange 2	A	B
66615-2516	KF25*KF16	NW-25	NW-16	50.00	28.0
66615-4016	KF40*KF16	NW-40	NW-16	65.02	28.0
66615-4025	KF40"KF25	NW-40	NW-25	65.02	28.0
66615-5016	KF50*KF16	NW-50	NW-16	70.00	28.0
66615-5025	KF50*KF25	NW-50	NW-25	70.00	28.0
66615-5040	KF50*KF40	NW-50	NW-40	70.00	28.0

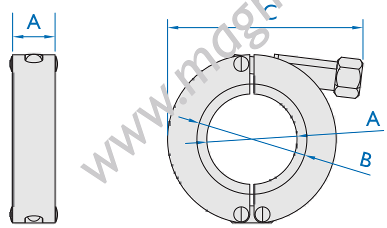


NW Reducer Nipples

Part Number	Flange Size	Dimensions, mm			
		Tube 1 & 2 Arm OD	Tube 3 Leg OD	A	B
66616-2516	KF25*KF16	25.40	19.05	51.56	32.26
66616-4016	KF40*KF16	38.10	19.05	60.96	38.86
66616-4025	KF40*KF25	38.10	25.40	60.96	[illegible]
66616-5016	KF50*KF16	50.80	19.05	80.01	45.21
66616-5025	KF50*KF25	50.80	25.40	80.01	62.70
66616-5040	KF50*KF40	50.80	38.10	80.01	67.31

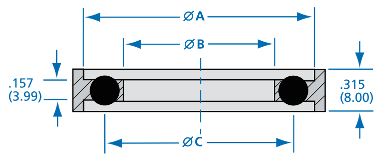


MAGNOX



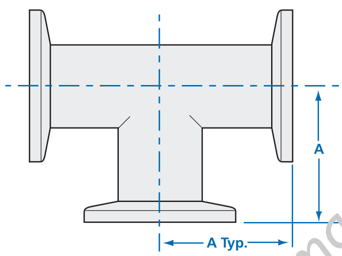
NW Short Weld Neck Flanges

Part Number	Flange Size	Dimensions, mm			
		A	B	C	D
66629-0075	KF10/16	25.40	30.80	68.00	15.90
66629-0100	KF25	34.12	40.94	80.63	15.90
66629-0150	KF40	49.40	55.70	87.20	15.90
66629-0200	KF50	69.00	75.60	109.30	15.90



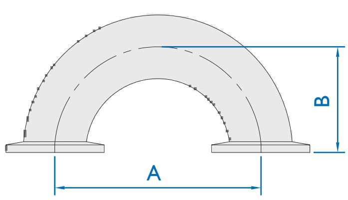
NW Screened Stainless Steel/Centering Rings with Viton O-ring

Part Number	Flange Size	O-ring Material	Dimensions, mm		
			A	B	C
66613-0050	KF16	Viton	29.97	16.00	23.11
66613-0100	KF25	Viton	40.13	24.13	33.02
66613-0150	KF40	Viton	55.12	40.13	48.01
66613-0200	KF50	Viton	74.93	50.04	58.93



NW Tees

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66617-0050	KF10	12.70	31.75
66617-0075	KF16	19.05	29.21
66617-H100	KF16	19.05	40.00
66617-0100	KF25	25.40	50.00
66617-H100	KF25	25.40	51.56
66617-0150	KF40	38.10	60.96
66617-H150	KF40	38.10	65.02
66617-0200	KF50	50.80	70.10
66617-H200	KF50	50.80	80.01

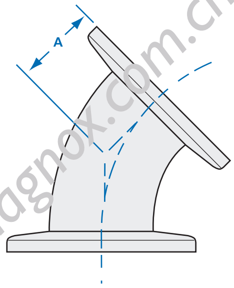


NW Screened Stainless Steel/Centering Rings with Viton O-ring

Part Number	Flange Size	Dimensions, mm		
		Tube OD	A	B
66630-0075	KF16	19.05	32.40	57.20
66630-0100	KF25	25.40	41.90	76.20
66630-0150	KF40	38.10	61.80	114.40
66630-0200	KF50	50.80	80.00	152.40

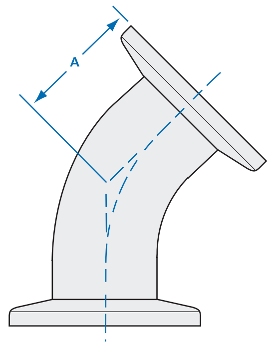
NW 45° Radius Elbows

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66618-0075	KF16	19.05	15.65
66618-0100	KF25	25.40	19.56
66618-0150	KF40	38.10	27.43
66618-0200	KF50	50.80	35.31



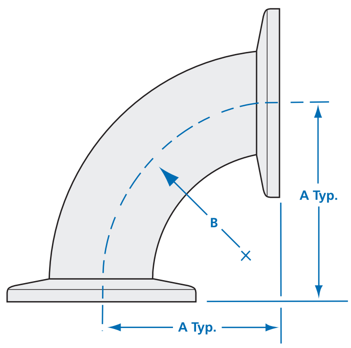
NW 45° Radius Elbows with Tangents

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66619-0075	KF16	19.05	23.11
66619-0100	KF25	25.40	33.80
66619-0150	KF40	38.10	42.67
66619-0200	KF50	50.80	50.55



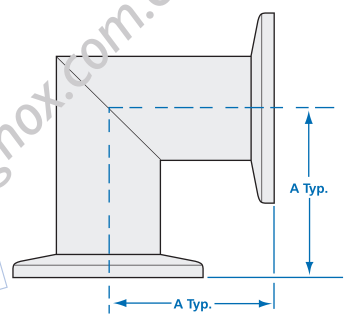
NW 90° Radius Elbows

Part Number	Flange Size	Dimensions, mm		
		Tube OD	A	B
66620-0050	KF10	12.70	31.75	19.05
66620-0075	KF16	19.05	29.21	28.60
66620-0100	KF25	25.40	41.91	38.10
66620-0150	KF40	38.10	60.96	57.15
66620-H150	KF40	38.10	65.02	57.15
66620-HL150	KF40	38.10	130.05	57.15
66620-0200	KF50	50.80	80.01	76.20
66620-HL200	KF50	50.80	139.95	76.20



NW 90° Mitered Elbows

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66621-0075	KF16	19.05	29.21
66621-0100	KF25	25.40	51.56
66621-0150	KF40	38.10	60.96
66621-H150	KF40	38.10	65.02
66621-0200	KF50	50.80	80.01
66621-H200	KF50	50.80	70.10



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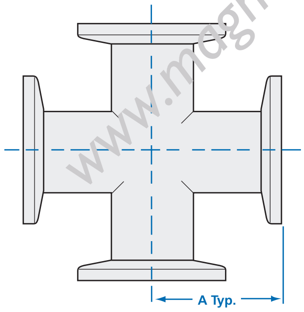
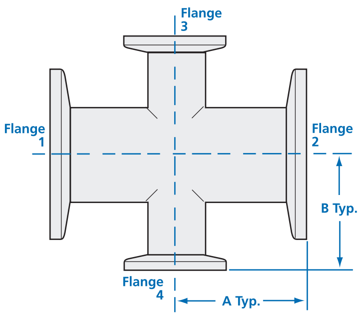


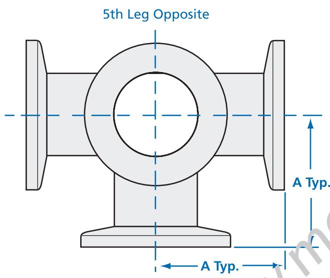
NW 4-Way Crosses

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66622-0050	KF10	12.70	31.75
66622-0075	KF16	19.05	29.21
66622-0100	KF25	25.40	51.56
66622-0150	KF40	38.10	60.96
66622-H150	KF40	38.10	65.02
66622-0200	KF50	50.80	70.10
66622-H200	KF50	50.80	80.01



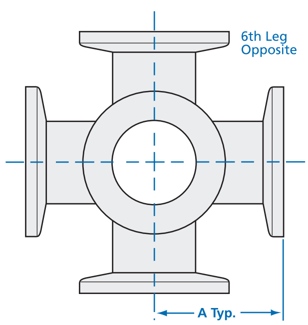
NW 4-Way Crosses

Part Number	Flange Size	Dimensions, mm			
		Tube 1 & 2 OD	Tube 3 & 4 OD	A	B
66623-2516	KF25*KF16	25.40	19.05	50.00	43.20
66623-4016	KF40*KF16	38.10	19.05	65.00	49.50
66623-4025	KF40*KF25	38.10	25.40	65.00	57.91
66623-5016	KF50*KF16	50.80	19.05	80.01	45.21
66623-5025	KF50*KF25	50.80	25.40	70.00	62.70
66623-5040	KF50*KF40	50.80	38.10	80.01	67.31



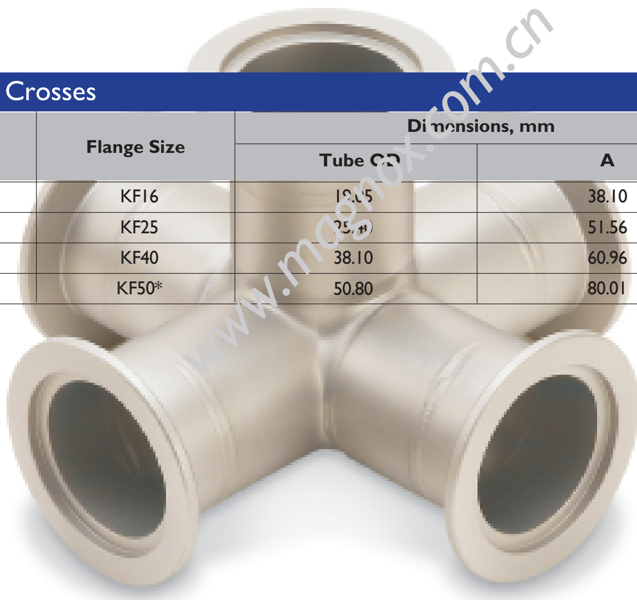
NW 5-Way Crosses

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66624-0075	KF16	19.05	38.10
66624-0100	KF25	25.40	51.56
66624-0150	KF40	38.10	60.96
66624-0200	KF50*	50.80	80.01



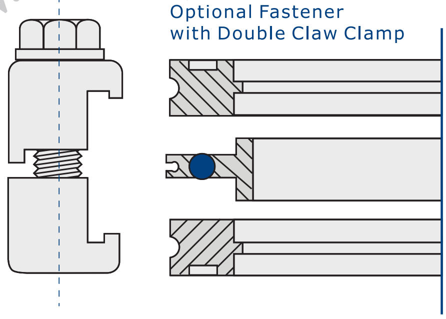
NW 6-Way Crosses

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66625-0075	KF16	19.05	38.10
66625-0100	KF25	25.40	51.56
66625-0150	KF40	38.10	60.96
66625-0200	KF50*	50.80	80.01

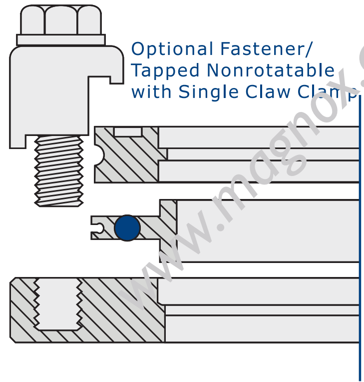


Vacuum Fittings-ISO Series

真空配件-ISO系列

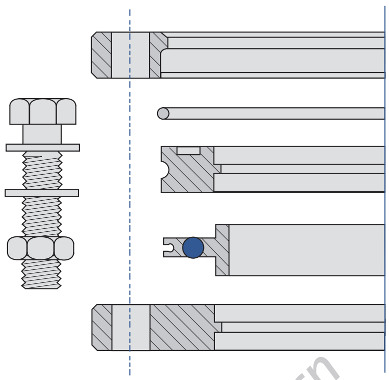


Optional Fastener/
Optional Fastener
with Double Claw Clamp

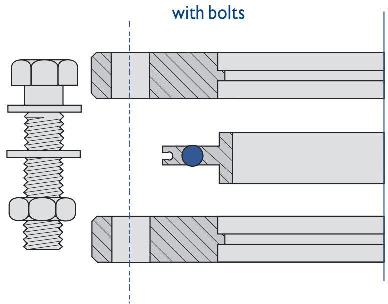


Optional Fastener/
Tapped Nonrotatable
with Single Claw Clamp

Optional Fastener/
Nonrotatable with Rotatable
Bolt Ring and Bolts



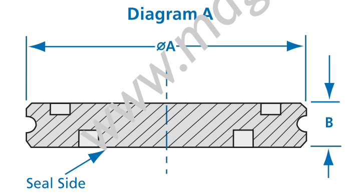
Nonrotatable/Nonrotatable
with bolts

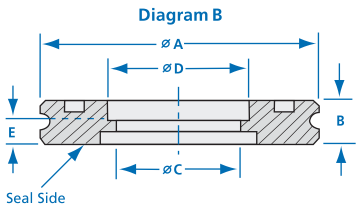


Specifications	
Blanks&Flanges	:304(other material available upon request)
Retainer Rings	:304(other material available upon request)
Centerings	:304(other material available upon request)
Clamps	:Aluminium
Outer Rings	:Aluminium
O Ring material	:Viton or NBR
Temperature Range	:150°(Viton)80°(NBR)
Vacuum Rate	:10^{-8} torr

Larger or special size available upon request

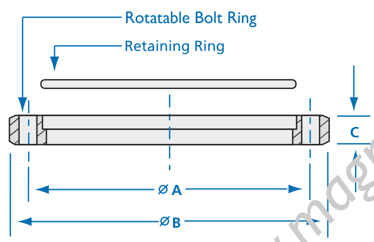
ISO Flanges & Fittings





ISO Optional Fastener Flanges

Part Number	Flange Size	Dimensions, mm						
		Diagam	Nominal Id	A	B	C	D	E
66101-0250	ISO-63	A	-	95.00	11.94	-	-	-
66102-0250	ISO-63	B	63.50	95.00	11.94	61.[illegible]3	63.75	6.35
66101-0300	ISO-80	A	-	110.01	11.94	-	-	-
66102-0300	ISO-80	B	76.20	110.01	11.94	74.63	76.45	6.35
66101-0400	ISO-100	A	-	130.00	11.94	-	-	-
66102-0400	ISO-100	B	101.60	130.00	11.94	99.31	101.85	6.35
66101-0600	ISO-160	A	-	180.00	11.94	-	-	-
66102-0600	ISO-160	B	152.40	180.01	11.94	149.23	152.91	9.53
66101-0800	ISO-200	A	-	240.00	11.94	-	-	-
66102-0800	ISO-200	B	203.20	240.00	11.94	200.03	203.71	9.53
66101-1000	ISO-250	A	-	289.99	11.94	-	-	-
66102-1000	ISO-250	B	254.00	289.99	11.94	250.83	254.51	9.53
66101-1200	ISO-320	A	-	370.00	17.02	-	-	-
66102-1200	ISO-320	B	304.80	370.00	17.02	298.70	305.31	9.53
66101-1600	ISO-400	A	-	449.99	17.02	-	-	-
66102-1600	ISO-400	B	406.40	449.99	17.02	396.85	406.91)	9.53
66101-2000	ISO-500	A	-	549.99	17.02	-	-	-
66102-2000	ISO-500	B	508.00	549.99	17.02	498.45	508.51)	9.53

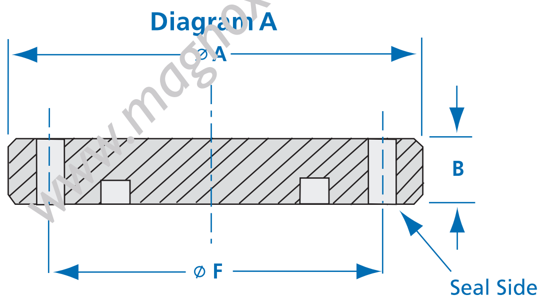


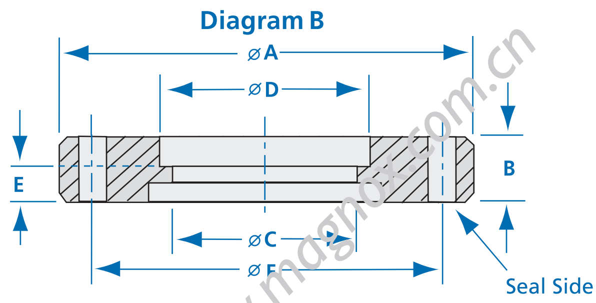
ISO Rotatable Bolt Ring and Retainer Ring

Part Number	Flange Size	Dimensions, mm		
		A	B	C
66103-0250	ISO-63	110.01	130.00	11.99
66103-0300	ISO-80	124.99	145.01	11.99
66103-0400	ISO-100	145.01	165.00	11.99
66103-0600	ISO-160	200.00	224.99	16.00
66103-0800	ISO-200	259.99	284.99	16.00
66103-1000	ISO-250	310.01	335.00	16.00
66103-1200	ISO-320	395.00	424.99	19.99
66103-1600	ISO-400	480.01	510.01	19.99
66103-2000	ISO-500	580.01	610.01	19.99

Replacement Retainer Ring

Part Number	Flange Size
66125-0250	ISO-63
66125-0300	ISO-80
66125-0400	ISO-100
66125-0600	ISO-160
66125-0800	ISO-200
66125-1000	ISO-250
66125-1200	ISO-320
66125-1600	ISO-400
66125-2000	ISO-500





ISO Nonrotatable Flanges

Part Number	Flange Size	Diagam	Nominal Id	Dimensions, mm							
				A	B	C	D	E	F	Bolt Holes	Bolt Diameter
66104-0250	ISO-63	A	-	130.00	11.94	-	-	-	110.01	110.01	110.01
66105-0250	ISO-63	B	63.50	130.00	11.94	61.93	63.75	6.35)	110.01	110.01	110.01
66104-0300	ISO-80	A	-	145.01	11.94	-	-	-	124.99	124.99	124.99
66105-0300	ISO-80	B	88.90	145.01	11.94	74.63	76.45	6.35)	124.99	124.99	124.99
66104-0400	ISO-100	A	-	165.00	11.94	-	-	-	124.99	124.99	124.99
66105-0400	ISO-100	B	101.60	165.00	11.94	99.32	101.85	6.35)	145.01	145.01	145.01
66104-0600	ISO-160	A	-	224.99	16.00	-	-	-	200.00	200.00	200.00
66105-0600	ISO-160	B	152.40	224.99	16.00	149.23	152.91	9.53)	200.00	200.00	200.00
66104-0800	ISO-200	A	-	284.99	16.00	-	-	-	259.99	259.99	259.99
66105-0800	ISO-200	B	203.20	284.99	16.00	200.03	203.71	9.53)	259.99	259.99	259.99
66104-1000	ISO-250	A	-	335.00	16.00	-	-	-	310.01	310.01	310.01
66105-1000	ISO-250	B	254.00	335.00	16.00	250.83	254.51	9.53)	310.01	310.01	310.01
66104-1200	ISO-320	A	-	424.99	17.02	-	-	-	395.00	395.00	395.00
66105-1200	ISO-320	B	304.80	424.99	17.02	298.70	305.31	9.53)	395.00	395.00	395.00
66104-1600	ISO-400	A	-	510.01	17.02	-	-	-	480.01	480.01	480.01
66105-1600	ISO-400	B	406.40	510.01	17.02	397.31	406.91)	9.53)	480.01	480.01	480.01
66104-2000	ISO-500	A	-	610.01	17.02	-	-	-	580.01	580.01	580.01
66105-2000	ISO-500	B	508.00	610.01	17.02	498.91	508.51)	9.53	580.01	580.01	580.01

ISO Flanges & Fittings

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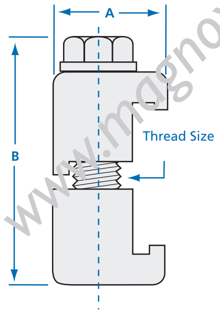
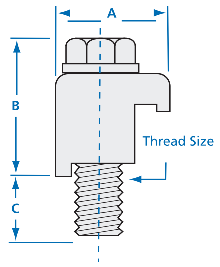


ISO Double Claw Aluminum Clamps

Part Number	Flange Size	Dimensions, mm	
		A	B
66106-063100	ISO63-ISO100	23.88	49.78
66106-160250	ISO160-ISO250	27.94	49.78
66106-320500	ISO320-ISO500	34.04	63.50



ISO Single Claw Aluminum Clamps - Metric

Part Number	Flange Size	Dimensions, mm			
		A	B	C	Metric Thread Size
66107-063100	ISO63-ISO100	23.88	30.48	10.16	M8x1.25
66107-160250	ISO160-ISO250	27.94	30.48	10.16	M10x1.50
66107-320500	ISO320-ISO500	34.04	37.59	20.07	M12x1.75

Diagram A

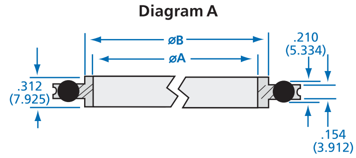
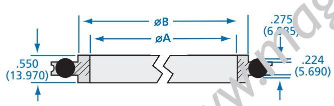
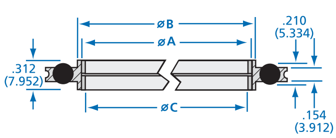


Diagram B



ISO Aluminum Centering Rings/With O-ring and Aluminum Spacer Ring

Part Number	Flange Size	Dimensions, mm			
		Diagram	O-ring Material	A	B
66108-0250	ISO-63	A	Viton	66.80	69.60
66108-0300	ISO-80	A	Viton	79.76	82.55
66108-0400	ISO-100	A	Viton	98.81	101.60
66108-0600	ISO-160	A	Viton	149.86	152.65
66108-0800	ISO-200	A	Viton	209.80	212.60
66108-1000	ISO-250	A	Viton	257.56	260.35
66108-1200	ISO-320	B	Viton	312.93	317.75
66108-1600	ISO-400	B	Viton	394.97	400.05
66108-2000	ISO-500	B	Viton	496.06	500.89



ISO Screened Stainless Steel Centering Rings with O-ring and Aluminum Spacer Ring

Part Number	Flange Size	Dimensions, mm			
		A	B	C	MESH (sg./in.)
66109-0250	ISO-63	66.80	69.60	60.45	16
66109-0300	ISO-80	79.76	82.55	72.90	16
66109-0400	ISO-100	98.81	101.60	88.90	16
66109-0600	ISO-160	149.86	152.65	139.70	16

Includes O-ring. See below for replacement O-rings

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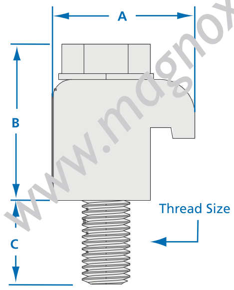
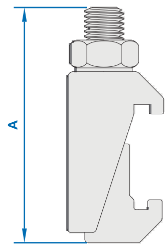


ISO Single Claw Aluminum Clamps - Metric

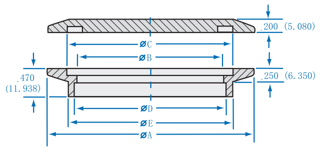
Part Number	Flange Size	Dimensions, mm				
		A	B	C	Metric Thread Size	Clamps Required
66127-063100	ISO63-ISO100	23.88	30.48	10.16	M8x1.25	4
66127-160250	ISO160-ISO250	27.94	30.48	10.16	M10x1.50	8
66127-320500	ISO320-ISO500	34.04	37.59	20.07	M12x1.75	12



ISO Double Claw Stainless Steel Clamps

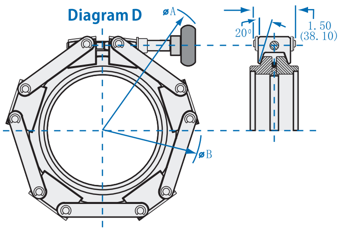
Part Number	Flange Size	Dimensions, mm	
		A	Bolt Size
66126-063250	ISO63-ISO250	60.00	M10
66126-320500	ISO320-ISO500	76.50	M12

备注 ： 物料号默认材质为不锈钢304，如需碳钢镀锌材质，物料号后加-CS



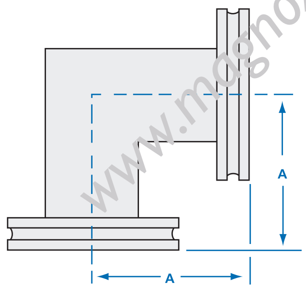
NW Flanges

Part Number	Flange Size	Dimensions, mm				
		A	B	C	D	E
66123-0250	NW63 Socket Flange	87.12	61.98	70.10	63.75	68.83
66124-0250	NW63 Blank	87.12	-	70.10	-	-
66123-0300	NW80 Socket Flange	114.05	72.90	83.06	76.45	97.03
66124-0300	NW80 Blank	114.05	-	83.06	-	-
66123-0400	NW100 Socket Flange	134.11	98.30	102.11	101.85	117.09
66124-0400	NW100 Blank	134.11	-	102.11	-	-
66123-0600	NW160 Socket Flange	190.00	98.30	153.00	152.90	168.90
66124-0600	NW160 Blank	190.00	-	153.00	-	-



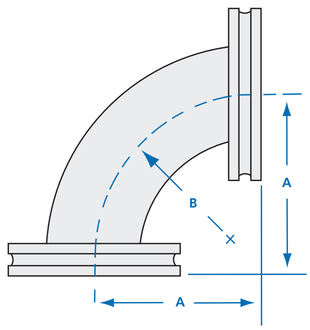
Chain Clamps for NW-80 to 160 Flanges

Part Number	Flange Size	Dimensions, mm	
		A	B
66828-0300	NW-80	244.09	153.92
66828-0400	NW-100	256.03	171.96
66828-0600	NW-160	273.08	231.70



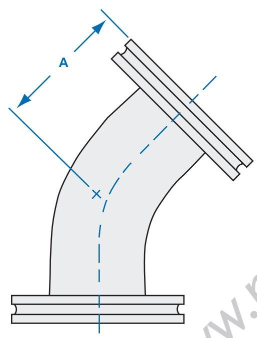
ISO 90 Mitered Elbows

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66110-0250	ISO-63	63.50	82.55
66110-0300	ISO-80	76.20	88.90
66110-0400	ISO-100	101.60	104.90
66110-0600	ISO-160	152.40	136.65
66110-0800	ISO-200	203.20	187.45
66110-1000	ISO-250	254.00	250.95



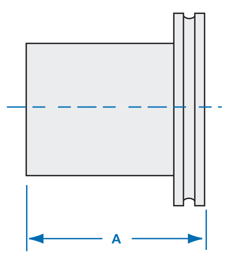
ISO 90° Radius Elbows

Part Number	Flange Size	Dimensions, mm		
		Tube OD	A	B
66111-0250	ISO-63	63.50	101.60	95.25
66111-0300	ISO-80	76.20	120.65	114.30
66111-0400	ISO-100	101.60	158.75	152.40
66111-0600	ISO-160	152.40	238.25	228.60
66111-0800	ISO-200	203.20	314.45	304.80
66111-1000	ISO-250	254.00	390.65	381.00



ISO 45° Elbows with Tangents

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66112-0250	ISO-63	63.50	82.55
66112-0300	ISO-80	76.20	99.82
66112-0400	ISO-100	101.60	127.76



ISO Half Nipples

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66113-0250	ISO-63	63.50	100/OPTION
66113-0300	ISO-80	76.20	100/OPTION
66113-0400	ISO-100	101.60	100/OPTION
66113-0600	ISO-160	152.40	100/OPTION
66113-0800	ISO-200	203.20	100/OPTION
66113-1000	ISO-250	254.00	100/OPTION
66113-1200	ISO-320	304.80	100/OPTION
66113-1600	ISO-400	406.40	100/OPTION
66113-2000	ISO-500	508.00	100/OPTION

可按照需求定制任意长。例如，需定制ISO63 L=300mm 订购号为66113-0250-0300

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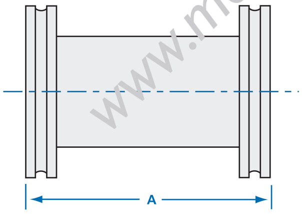
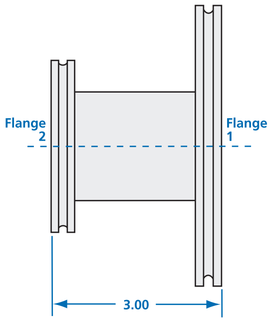


ISO Full Nipples

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66114-0250	ISO-63	63.50	100/OPTION
66114-0300	ISO-80	76.20	100/OPTION
66114-0400	ISO-100	101.60	100/OPTION
66114-0600	ISO-160	152.40	100/OPTION
66114-0800	ISO-200	203.20	100/OPTION
66114-1000	ISO-250	254.00	100/OPTION
66114-1200	ISO-320	304.00	100/OPTION
66114-1600	ISO-400	406.00	100/OPTION
66114-2000	ISO-500	508.00	100/OPTION

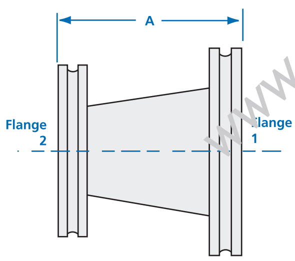
注：可按照需求定制任意长度。例如，据定制ISO063 L=750mm,订购号为66114-0250-0750



ISO Reducer Nipples

Part Number	Dimensions, mm		
	Flange 1	Flange 2	Tube OD
66115-080063	ISO-80	ISO-63	63.50
66115-100063	ISO-100	ISO-63	63.50
66115-100080	ISO-100	ISO-80	76.20
66115-160063	ISO-160	ISO-63	63.50
66115-160080	ISO-160	ISO-80	76.20
66115-160100	ISO-160	ISO-100	101.60
66115-200063	ISO-200	ISO-63	63.50
66115-200080	ISO-200	ISO-80	76.20
66115-200100	ISO-200	ISO-100	101.60
66115-200160	ISO-200	ISO-160	152.40
66115-250063	ISO-250	ISO-63	63.50
66115-250080	ISO-250	ISO-80	76.20
66115-250100	ISO-250	ISO-100	101.60
66115-250160	ISO-250	ISO-160	152.40
66115-250200	ISO-250	ISO-200	203.20

注：可按照需求定制任意长度。例如，需定制ISO080*ISO063 L=750mm,订购号为66115-080063-0750



ISO Conical Reducer Nipples

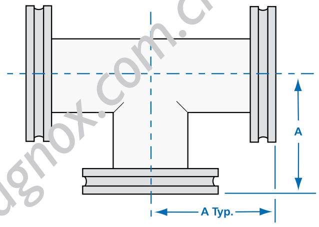
Part Number	Dimensions, mm				
	Flange 1		Flange 2		A
	Type	Tube OD	Type	Tube OD	
66116-080063	ISO-80	76.2	ISO-63	63.50	104.65
66116-100063	ISO-100	101.6	ISO-63	63.50	104.65
66116-100080	ISO-100	101.6	ISO-80	76.20	104.65

ISO Flanges & Fittings

MAGNOX

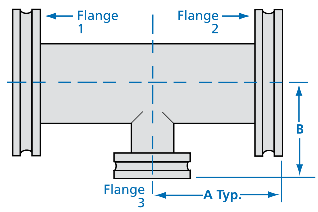
ISO Equal Tee

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66117-0250	ISO-63	63.50	82.55
66117-0300	ISO-80	76.20	88.90
66117-0400	ISO-100	101.60	104.90
66117-0600	ISO-160	152.40	136.65
66117-0800	ISO-200	203.20	187.45
66117-1000	ISO-250	254.00	250.95



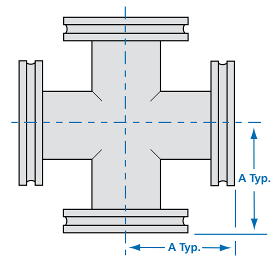
ISO Reducer Tees

Part Number	Dimensions, mm					
	Flange 1 & 2		Flange 3		A	B
	Type	Arm OD	Type	Leg OD		
66118-080063	ISO-80	76.20	ISO-63	63.50	88.90	88.90
66118-100063	ISO-100	101.6	ISO-63	63.50	104.90	101.60
66118-100080	ISO-100	101.6	ISO-80	76.20	104.90	101.60
66118-160063	ISO-160	152.4	ISO-63	63.50	133.30	127.00
66118-160080	ISO-160	152.4	ISO-80	76.20	133.30	127.00
66118-160100	ISO-160	152.4	ISO-100	101.60	133.30	130.30
66118-200063	ISO-200	203.2	ISO-63	63.50	187.45	152.40
66118-200080	ISO-200	203.2	ISO-80	76.20	187.45	152.40
66118-200100	ISO-200	203.2	ISO-100	101.60	187.45	155.70
66118-200160	ISO-200	203.2	ISO-160	152.40	187.45	162.05



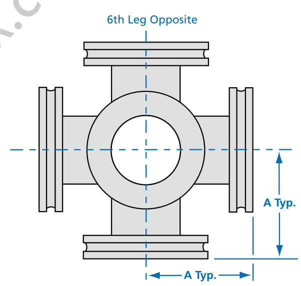
ISO 4-Way Crosses

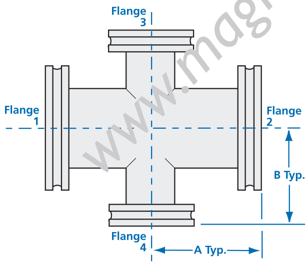
Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66119-0250	ISO-63	63.50	82.55
66119-0300	ISO-80	76.20	88.90
66119-0400	ISO-100	101.60	104.90
66119-0600	ISO-160	152.40	136.65
66119-0800	ISO-200	203.20	187.45
66119-1000	ISO-250	254.00	250.95



ISO 6-Way Crosses

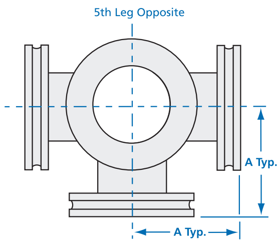
Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66122-0250	ISO-63	63.50	82.55
66122-0300	ISO-80	76.20	88.90
66122-0400	ISO-100	101.60	104.90
66122-0600	ISO-160	152.40	136.65
66122-0800	ISO-200	203.20	187.45
66122-1000	ISO-250	254.00	250.95





ISO 4-Way Reducer Crosses

Part Number	Dimensions, mm					
	Flange 1 & 2 Type	Flange 1 & 2 Arm OD	Flange 3 Type	Flange 3 Leg OD	A	B
66120-080063	ISO-80	76.20	ISO-63	63.50	83.90	88.90
66120-100063	ISO-100	101.60	ISO-63	63.50	104.90	101.60
66120-100080	ISO-100	101.60	ISO-80	76.20	104.90	101.60
66120-160063	ISO-160	152.40	ISO-63	63.50	133.30	127.00
66120-160080	ISO-160	152.40	ISO-80	76.20	133.30	127.00
66120-200100	ISO-200	152.40	ISO-100	101.60	133.30	130.30
66120-250160	ISO-250	254.00	ISO-160	152.40	187.45	162.05

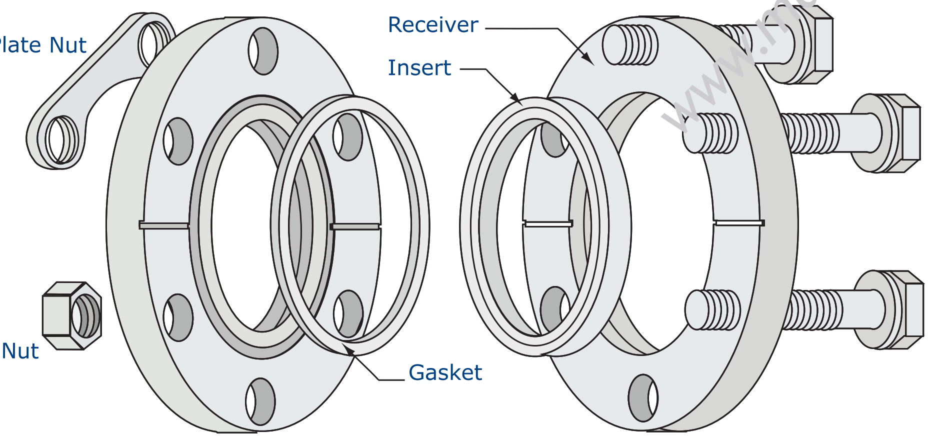


ISO 5-Way Crosses

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66121-0250	ISO-63	63.50	82.55
66121-0300	ISO-80	76.20	88.90
66121-0400	ISO-100	101.60	104.90
66121-0600	ISO-160	152.40	136.65
66121-0800	ISO-200	203.20	187.45
66121-1000	ISO-250	254.00	250.95

Vacuum Fittings-CF Series

真空配件−CF系列



Specifications	
Blanks&Flanges	:304(other material available upon request)
Gaskets	:OFHC Copper or Viton
Bolt	:304
O Ring material	:OFHC Copper Or Slver Plated
Temperature Range	:-200°~450°(OFHC Copper)
Vacuum Rate	:10-13 torr
Torque Rating	:CF35 and smller 220 kgf-cm CF63 and langer 360 kgf-cm

Larger or special size available upon request

Diagram A

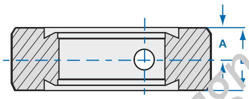


Diagram B

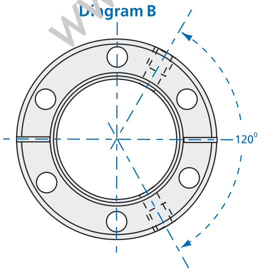
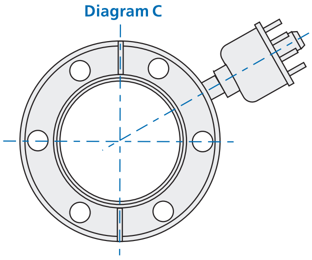


Diagram C



CF Double-Sided Special Purpose Flanges

Part Number	Flange OD	Feature	Diagram	D	E
66311-133-01	33.78	(1) 1/16 inch (1.59) NPT hole	A	6.35	12.70
66311-275-01	69.85	(1) 1/8 inch (3.18) NPT hole	A	9.65	19.05
66311-133-D2	33.78	(2) 1/16 inch (1.59) NPT holes	B	6.35	12.70
66311-275-02	69.85	(2) 1/8 inch (3.18) NPT holes	B	9.65	19.05
66311-133-DT	33.78	Thermocouple gauge tube	C	6.35	12.70
66311-275-DT	69.85	Thermocouple gauge tube	C	9.65	19.05
66311-133-DV	33.78	Up-to-air valve	D	6.35	12.70
66311-275-DV	69.85	Up-to-air valve	D	9.65	19.05
66311-133-D1V	33.78	(1) 1/16 inch (1.59) NPT hole & up-to-air valve	F	6.35	12.70
66311-275-D1V	69.85	(1)Vs inch (3.18) NPT hole & up-to-air valve	F	9.65	19.05
66311-133-DTV	33.78	Thermocouple gauge tube & up-to-air valve	E	6.35	12.70
66311-275-DTV	69.85	Thermocouple gauge tube & up-to-air valve	E	9.65	19.05
66311-133-DTV-1/4 MVCR	33.78	Thermocouple gauge tube & up-to-air valve with inch (6.35) CajonmaleVCR fitting on valve	E	6.35	12.70
66311-275-DTV-1/4 MVCR	69.85	Thermocouple gauge tube & up-to-air valve with inch (6.35) CajonmaleVCR fitting on valve	E	9.65	19.05
66311-133-DTV-1/4 FVCR	33.78	Thermocouple gauge tube & up-to-air valve with inch (6.35) CajonfermaleVCR fitting on valve	E	6.35	12.70
66311-275-DTV-1/4 FVCR	69.85	Thermocouple gauge tube & up-to-air valve with 4 inch (6.35) CajonfermaleVCR fitting on valve	E	9.65	19.05
66311-133-DTV-1/4 SWAG	33.78	Thermocouple gauge tube & up-to-air valve with inch (6.35)Swagelok fitting on valve	E	6.35	12.70
66311-275-DTV-1/4 SWAG	69.85	Thermocouple gauge tube & up-to-air valve with	E	9.65	19.05
66311-275-DS-MINI	69.85	inch (6.35)Swagelok fitting on valve (1) 1.33 inch (33.78) OD side port	G	9.65	19.05

Diagram E

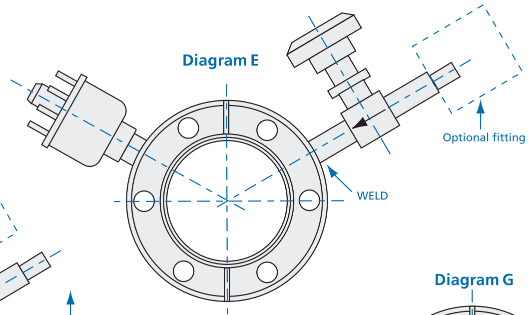


Diagram D

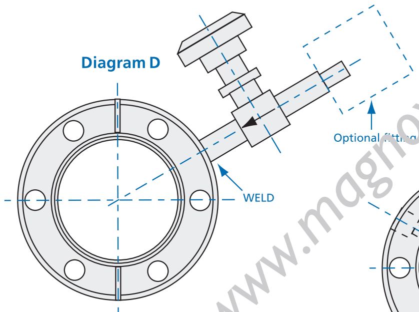


Diagram F

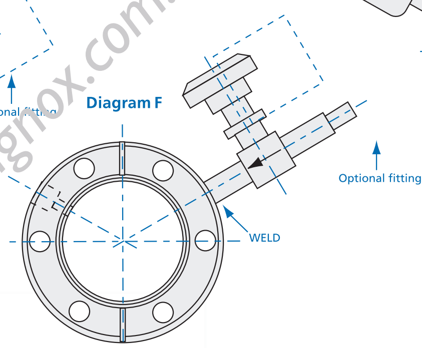
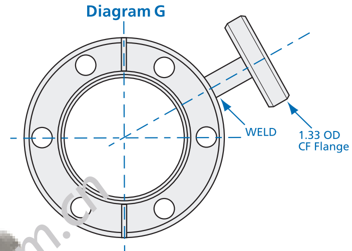
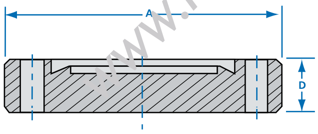


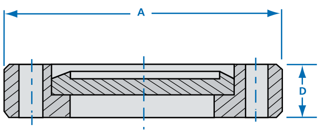
Diagram G





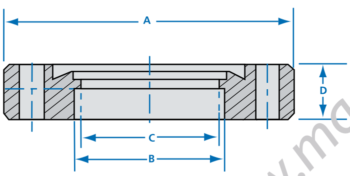
CF Blank Flange Fixed

Part Number	Flange Size	Dimensions, mm	
		A	D
66301-0133	CF16	33.70	7.60
66301-0212	CF25	53.80	11.90
66301-0275	CF35	69.30	12.70
66301-0338	CF50	85.30	17.30
66301-0450	CF63	113.50	19.10
66301-0600	CF100	151.60	21.30
66301-0800	CF160	202.44	23.90
66301-1000	CF200	253.24	24.60



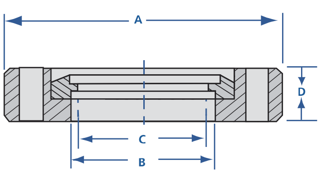
CF Blank Flange Rotatable

Part Number	Flange Size	Dimensions, mm	
		A	D
66302-0133	CF16	33.70	7.60
66302-0212	CF25	53.80	11.90
66302-0275	CF35	69.30	12.70
66302-0338	CF50	85.30	17.30
66302-0450	CF63	113.50	19.10
66302-0600	CF100	151.60	21.30
66302-0800	CF160	202.44	23.90
66302-1000	CF200	253.24	24.60



CF Boared Flange Fixed

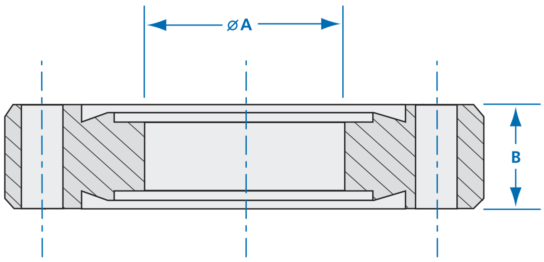
Part Number	Flange Size	Dimensions, mm			
		A	B	C	D
66303-0133	CF16	33.70	19.41	16.00	7.60
66303-0212	CF25	53.80	25.65	23.90	11.90
66303-0275	CF35	69.30	38.35	36.60	12.70
66303-0338	CF50	85.30	51.05	49.30	17.30
66303-0450	CF63	113.50	63.70	62.00	19.10
66303-0600	CF100	151.60	101.80	99.60	21.30
66303-0800	CF160	202.44	153.10	150.40	23.90
66303-1000	CF200	253.24	203.70	200.40	24.60



CF Bored Flange Rotatable

Part Number	Flange Size	Dimensions, mm			
		A	B	C	D
66305-0133	CF16	33.70	19.41	16.00	7.60
66305-0212	CF25	53.80	25.65	23.90	11.90
66305-0275	CF35	69.30	38.35	36.60	12.70
66305-0338	CF50	85.30	51.05	49.30	17.30
66305-0450	CF63	113.50	63.70	62.00	19.10
66305-0600	CF100	151.60	101.80	99.60	21.30
66305-0800	CF160	202.44	153.10	150.40	23.90
66305-1000	CF200	253.24	203.70	200.40	24.60

MAGNOX

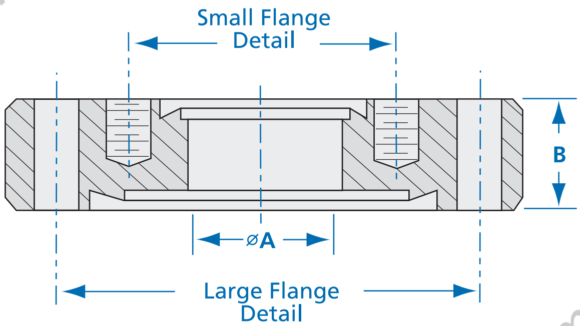


CF Double-Sided Flanges

Part Number	Nominal ID	Made From	Dimensions, mm	
			A	B
66312-133-000D	1⅓(34)	133-000N	-	7.62
66312-133-025D	1⅓(34)	133-000N	6.48	7.62
66312-133-038D	1⅓(34)	133-000N	9.65	7.62
66312-133-050D	1⅓(34)	133-000N	12.83	7.62
66312-133-0750	1⅓(34)	133-000N	16.00	7.62
66312-133-000DS	1⅓(34)	133-000NS	-	12.70
66312-133-075DS	1⅓(34)	133-000NS	16.00	12.70
66312-212-000D	2⅛(54)	212-000N	-	11.94
66312-212-100D	2⅛(54)	212-000N	25.65	11.94
66312-275-000D	2⅛(54)	275-000N	-	12.70
66312-275-025D	2¾(70)	275-000N	6.48	12.70
66312-275-050D	2¾(70)	275-000N	12.83	12.70
66312-275-075D	2¾(70)	275-000N	19.30	12.70
66312-275-100D	2¾(70)	275-000N	25.65	12.70
66312-275-125D	2¾(70)	275-000N	32.00	12.70
66312-275-150D	2¾(70)	275-000N	38.35	12.70
66312-275-000DS	2¾(70)	275-000N	-	19.05
66312-275-1500S	2¾(70)	S275-000NS	38.35	19.05
66312-338-000D	3⅜(86)	338-000N	-	17.45
66312-338-150D	3⅜(86)	338-000N	38.35	17.45
66312-338-200D	3⅜(86)	338-000N	51.05	17.45
66312-450-000D	4½(114)	450-000N	-	17.45
66312-450-150D	4½(114)	450-000N	38.35	17.45
66312-450-200D	4½(114)	450-000N	51.05	17.45
66312-450-250D	4½(114)	450-000N	63.75	17.45
66312-462-000D	4⅝(117)	462-000N	-	20.62
66312-462-300D	4⅝(117)	462-000N	76.45	20.62
66312-600-000D	6 (152)	600-000N	-	19.84
66312-600-400D	6 (152)	600-000N	101.85	19.84
66312-675-000D	6¾(171)	675-000N	-	21.44
66312-675-500D	6¾(171)	675-000N	127.25	21.44
66312-800-000D	8 (203)	800-000N	-	22.23
66312-800-600D	8 (203)	800-000N	152.91	22.23
66312-1000-000D	10 (254)	1000-000N	-	24.59
66312-1000-800D	10 (254)	1000-000N	203.71	24.59
66312-1325-0000	13¼ (337)	1325-000N	-	28.58
66312-1325-1000D	13¼ (337)	1325-000N	254.51	28.58
66312-1400-000D	14 (356)	1400-000N	-	28.58
66312-1400-12000	14 (356)	1400-000N	305.31	28.58

DS = Thicker than standard flange D = Double-sided flange, nonrotatable

double-sided flange are identical to standard CF fanges except the same gasket-sealing detal is machined into both taces of the lange. hese langes can be inserted between like-sized flanges as spacers, orifice plates, or when radially drilled, as custom penetrations into vacuum systems,



CF Zero Length Reducer Flanges

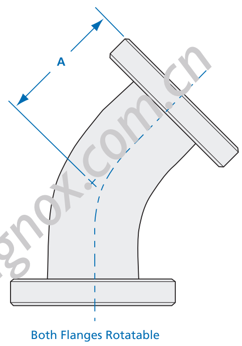
Part Number	Small FlangeJetail	Large FlangeDetail	Dimensions, mm	
			A	B
66313-212-133-075Z	133-000NT	212-000NT	15.88	11.94
66313-275-133-075Z	133-000NT	275-000N	15.88	12.70
66313-275-212-100Z	212-000NT	275-000NT	25.40	12.70
66313-338-133-075Z	133-000NT	338-000N	15.88	17.45
66313-338-212-100Z	212-000NT	338-000NT	25.40	17.45
66313-338-275-150Z	275-000NT	338-000NT	38.10	1745
66313-450-133-075Z	133-00NT	450-000N	15.88	17.45
66313-450-212-100Z	212-000NT	450-000N	25.40	17.45
66313-450-275-150Z	275-000NT	450-000N	38.10	17.45
66313-450-338-200Z	338-000NT	450-000NT	50.80	1745
66313-462-133-075Z	133-000NT	462-000N	15.88	20.62
66313-462-212-100Z	212-000NT	462-000N	25.40	20.62
66313-462-275-150Z	275-000NT	462-000N	38.10	20.62
66313-462-338-200Z	338-000NT	462-000N	50.80	20.62
66313-600-133-075Z	133-000NT	600-000N	15.88	1984
66313-600-212-100Z	212-000NT	600-000N	25.40	19.84
66313-600-275-150Z	275-000NT	600-000N	38.10	19 84
66313-600-338-200Z	338-000NT	600-000N	50.80	19 84
66313-600-450-250Z	450-000NT	600-000N	63.50	19.84
66313-600-462-300Z	462-000NT	600-000NT	76.20	19.84
66313-675-133-075Z	133-000NT	675-000N	15.88	21.44
66313-675-212-100Z	212-000NT	675-000N	25.40	21.44
66313-675-275-150Z	275-000NT	675-000N	38.10	21.44
56313-675-338-200Z	338-000NT	675-000N	50.80	21.44
56313-675-450-250Z	450-000NT	675-000N	63.50	21.44
56313-675-162-300Z	462-000NT	675-000N	76.20	21.44
56313-675-600-400Z	600-000NT	675-000NT	101.60	21.44
56313-800-133-075Z	133-000NT	800-000N	15.88	22.23
56313-800-212-100Z	212-000NT	800-000N	25.40	22.23
66313-800-275-150Z	275-000NT	800-000N	38.10	22.23
66313-800-338-200Z	338-000NT	800-000N	50.80	22.23
66313-800-450-250Z	450-000NT	800-000N	63.50	22.23
66313-800-462-300Z	462-000NT	800-000N	76.20	22.23
66313-800-600-400Z	600-000NT	800-000N	101.60	22.23
66313-800-675-500Z	675-000NT	800-000NT	127.00	22.23
66313-1000-133-075Z	133-000NT	1000-000N	15.88	24.59
66313-1000-212-100Z	212-000NT	1000-000N	25.40	24.59
66313-1000-275-150Z	275-000NT	1000-000N	38.10	24.59
66313-1000-338-200Z	338-000NT	1000-000N	50.80	24.59
66313-1000-450-250Z	450-000NT	1000-000N	63.50	24.59
66313-1000-462-300Z	462-000NT	1000-00N	76.20	24.59
66313-1000-600-400Z	600-000NT	1000-000N	101.60	24.59
66313-1000-675-500Z	675-000NT	1000-000N	127.00	24.59
66313-1000-800-600Z	800-000NT	1000-000N	152.40	24.59
66313-1325-133-075Z	133-000NT	1325-000N	15.88	28.58
66313-1325-212-100Z	212-000NT	1325-000N	25.40	28.58
66313-1325-275-150Z	275-100NT	1325-000N	38.10	28.58
66313-1325-338-200Z	338-000NT	1325-000N	50.80	28.58
66313-1325-450-250Z	450-000NT	1325-000N	63.50	28.58
66313-1325-462-300Z	462-000NT	1325-000N	76.20	28.58
66313-1325-600-400Z	600-000NT	1325-000N	101.60	28 58
66313-1325-675-500Z	675-000NT	1325-000N	127.00	28 58
66313-1325-800-600Z	800-000NT	1325-000N	152.40	28.58
66313-1325-1000-800Z	1000-000NT	1325-000N	203.20	28.58

Flange Detail Definitions, N=Nonrotatable,clearance bolt holes; NT=Nonrotatable,tapped bolt holes

MAGNOX

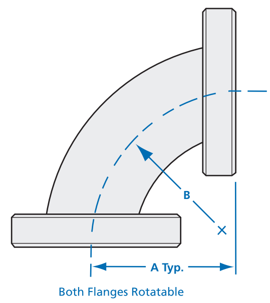
CF 45° Radius Elbow with Tangents

Part Number	Flange Size	Dimensions, mm	
		A	B
66319-0133	CF 1.33"	19.05	23.88
66319-0212	CF 2.12"	25.40	28.96
66319-0275	CF 2.75"	38.10	44.20
66319-0338	CF 3.38"	50.80	52.58
66319-0450	CF 4.50"	63.50	85.60
66319-0462	CF 4.62"	76.20	100.58
66319-0600	CF 6.00"	101.60	132.59



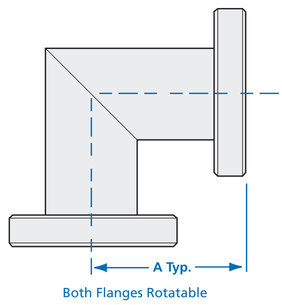
CF 45° Radius Elbow with Tangents

Part Number	Flange Size	Dimensions, mm		
		Tube OD	A	B
66320-0133	CF 1.33"	19.05	38.10	28.60
66320-0212	CF 2.12"	25.40	42.42	38.10
66320-0275	CF 2.75"	38.10	62.48	57.15
66320-0338	CF 3.38"	50.80	81.79	76.20
66320-0450	CF 4.50"	63.5	104.65	95.25
66320-0462	CF 4.62"	76.20	121.41	114.30
66320-0600	CF 6.00"	101.60	163.58	152.40
66320-0800	CF 8.00"	152.40	241.30	228.60
66320-1000	CF 10.00"	203.20	317.50	304.80
66320-1325	CF 13.25"	254.00	393.70	381.00



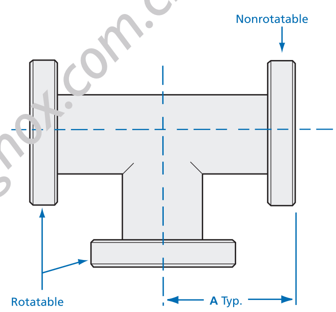
CF 90°Mitered Elbows

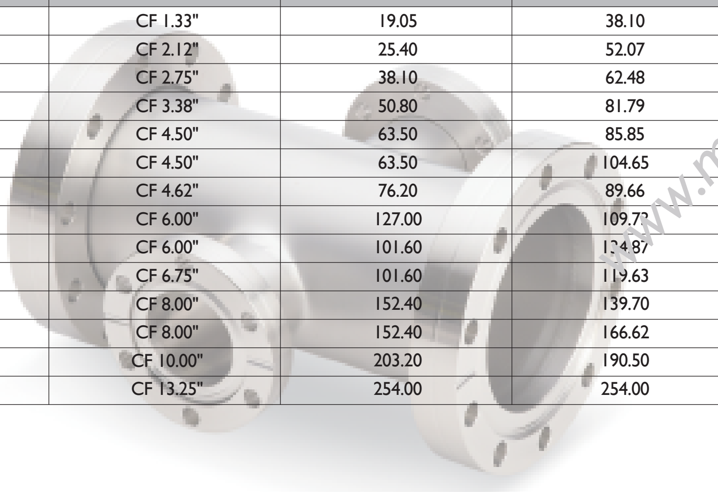
Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66321-0133	CF 1.33"	19.05	38.10
66321-0212	CF 2.12"	25.40	52.07
66321-0275	CF 2.75"	38.10	62.48
66321-0338	CF 3.38"	50.80	81.79
66321-0450	CF 4.50"	63.50	85.85
66321-0450H	CF 4.50"	63.50	104.65
66321-0462	CF 4.62"	76.20	89.66
66321-0600	CF 6.00"	127.00	109.73
66321-0600H	CF 6.00"	101.60	134.87
66321-0675	CF 6.75"	101.60	119.63
66321-0800	CF 8.00"	152.40	139.70
66321-0800H	CF 8.00"	152.40	166.62
66321-1000	CF 10.00"	203.20	190.50
66321-1325	CF 13.25"	254.00	254.00



CF 90°Mitered Elbows

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66322-0133	CF 1.33"	19.05	38.10
66322-0212	CF 2.12"	25.40	52.07
66322-0275	CF 2.75"	38.10	62.48
66322-0338	CF 3.38"	50.80	81.79
66322-0450	CF 4.50"	63.50	85.85
66322-0450H	CF 4.50"	63.50	104.65
66322-0462	CF 4.62"	76.20	89.66
66322-0600	CF 6.00"	127.00	109.73
66322-0600H	CF 6.00"	101.60	134.87
66322-0675	CF 6.75"	101.60	119.63
66322-0800	CF 8.00"	152.40	139.70
66322-0800H	CF 8.00"	152.40	166.62
66322-1000	CF 10.00"	203.20	190.50
66322-1325	CF 13.25"	254.00	254.00



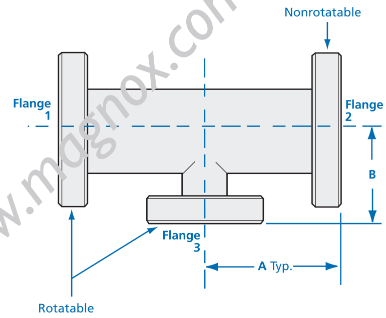


CF Flanges & Fittings

MAGNOX

CF Reducer Tees

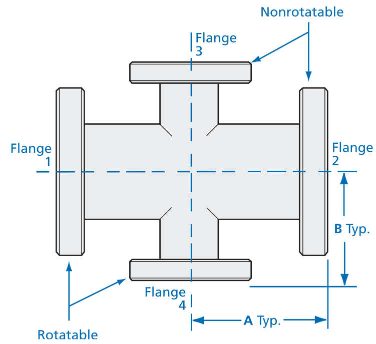
Part Number	Dimensions, mm					
	Flange 1 & 2 Flange OD	Flange 1 & 2 Tube OD	Flange 3 Flange OD	Flange 3 Tube OD	A	B
66323-02750133	CF 2.75"	38.10	CF 1.33"	19.05	62.48	47.50
66323-02750212	CF 2.75"	38.10	CF 2.12"	25.40	62.48	58.17
66323-03380133	CF 3.38"	50.80	CF 1.33"	19.05	81.79	54.10
66323-03380275	CF 3.38"	50.80	CF 2.75"	38.10	81.79	68.83
66323-04500275	CF 4.50"	63.50	CF 2.75"	38.10	85.85	75.18
66323-04500338	CF 4.50"	63.50	CF 3.38"	50.80	85.85	88.39
66323-04620338	CF 4.62"	76.20	CF 3.38"	50.80	89.66	94.74
66323-04620450	CF 4.62"	76.20	CF 4.50"	63.50	89.66	92.20
66323-06000275	CF 6.00"	101.60	CF 2.75"	38.10	109.73	94.23
66323-06000338	CF 6.00"	101.60	CF 3.38"	50.80	109.73	107.44
66323-06000450	CF 6.00"	101.60	CF 4.50"	63.50	109.73	104.90
66323-06000462	CF 6.00"	101.60	CF 4.62"	76.20	109.73	102.36
66323-06750600	CF 6.75"	127.00	CF 6.00"	101.60	119.63	122.43
66323-08000275	CF 8.00"	152.40	CF 2.75"	38.10	139.70	119.63
66323-08000338	CF 8.00"	152.40	CF 3.38"	50.80	139.70	132.84
66323-08000450	CF 8.00"	152.40	CF 4.50"	63.50	139.70	130.30
66323-08000600	CF 8.00"	152.40	CF 6.00"	101.60	139.70	135.13
66323-10000800	CF 10.00"	203.20	CF 8.00"	152.40	190.50	165.10



CF Reducer Crosses

Part Number	Dimensions, mm					
	Flange 1 & 2 Flange OD	Flange 1 & 2 Tube OD	Flange 3 & 4 Flange OD	Flange 3 & 4 Tube OD	A	B
66324-02750133	CF 2.75"	38.10	CF 1.33"	19.05	62.48	47.50
66324-02750212	CF 2.75"	38.10	CF 2.12"	25.40	62.48	58.17
66324-03380133	CF 3.38"	50.80	CF 1.33"	19.05	81.79	54.10
66324-03380275	CF 3.38"	50.80	CF 2.75"	38.10	81.79	68.83
66324-04500275	CF 4.50"	63.50	CF 2.75"	38.10	85.85	75.18
66324-04500338	CF 4.50"	63.50	CF 3.38"	50.80	85.85	88.39
66324-04620338	CF 4.62"	76.20	CF 3.38"	50.80	89.66	94.74
66324-04620450	CF 4.62"	76.20	CF 4.50"	63.50	89.66	92.20
66324-06000275	CF 6.00"	101.60	CF 2.75"	38.10	109.73	94.23
66324-06000338	CF 6.00"	101.60	CF 3.38"	50.80	109.73	107.44
66324-06000450	CF 6.00"	101.60	CF 4.50"	63.50	109.73	104.90
66324-06000462	CF 6.00"	101.60	CF 4.62"	76.20	109.73	102.36
66324-06750600	CF 6.75"	127.00	CF 6.00"	101.60	119.63	122.43
66324-08000275	CF 8.00"	152.40	CF 2.75"	38.10	139.70	119.63
66324-08000338	CF 8.00"	152.40	CF 3.38"	50.80	139.70	132.84
66324-08000450	CF 8.00"	152.40	CF 4.50"	63.50	139.70	130.30
66324-08000600	CF 8.00"	152.40	CF 6.00"	101.60	139.70	135.13
66324-10000800	CF 10.00"	152.40	CF 8.00"	152.40	190.50	165.10

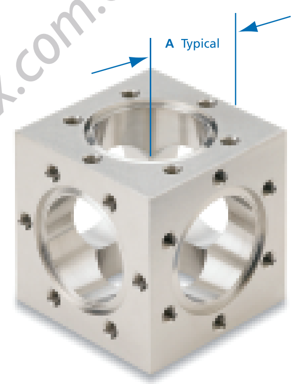
Note: Other reducer combinations can be supplied upon request.



CF 6-Way Cube Crosses

Part Number	Flange Size	Dimensions, mm A
66235-0133	CF 1.33"	17.02
66235-0275	CF 2.75"	34.80
66235-0450	CF 4.50"	56.90
66235-0600	CF 6.00"	75.69
66235-0800	CF 8.00"	101.09

Note: Cube crosses are available in other sizes upon request

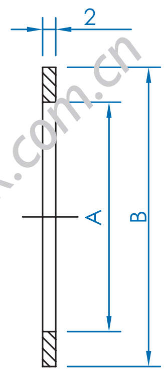


CF Flanges & Fittings

MAGNOX

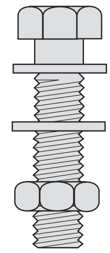
CF OFHC-Copper

Part Number	Flange Size	Dimensions, mm	
		A	B
66306-0133	CF16	16.30	21.30
66306-0212	CF25	25.60	35.00
66306-0275	CF35	39.00	48.20
66306-0338	CF50	52.00	61.60
66306-0450	CF63	63.80	82.40
66306-0600	CF100	102.00	120.50
66306-0800	CF160	152.80	171.30
66306-1000	CF200	203.60	222.10



Hex Head Bolts-metric Thread

Part Number	Flange Size	Flange Bolt Holes
66307-0133	CF16	6
66307-0212	CF25	6
66307-0275	CF35	6
66307-0338	CF50	8
66307-0450	CF63	8
66307-0600	CF100	10
66307-0800	CF160	16
66307-1000	CF200	20



Vacuum Through-hole bolt

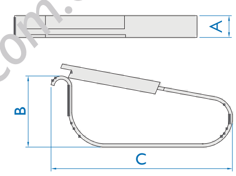
Part Number	Size	Length
66330-003010	M3	10
66330-004015	M4	15
66330-005020	M5	20
66330-006025	M6	25
66330-008030	M8	30
66330-010050	M10	50

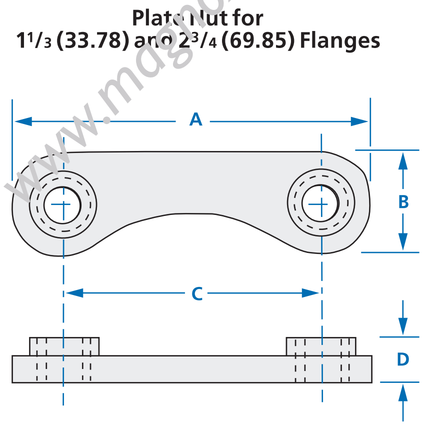
注:长度可按照需求定制生产，可提供镀银表面，代码SL;
如需要M3长度为20mm,表面镀银,物料号为66330-003020-SI

Gasket Clip

Part Number	Dimensions, mm		
	A	B	C
66308	6.00	19.50	51.00

All Gasket Clip-10 per package





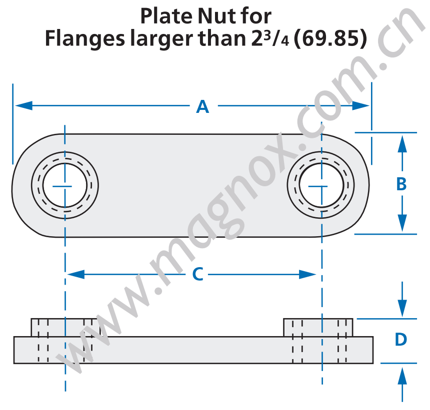
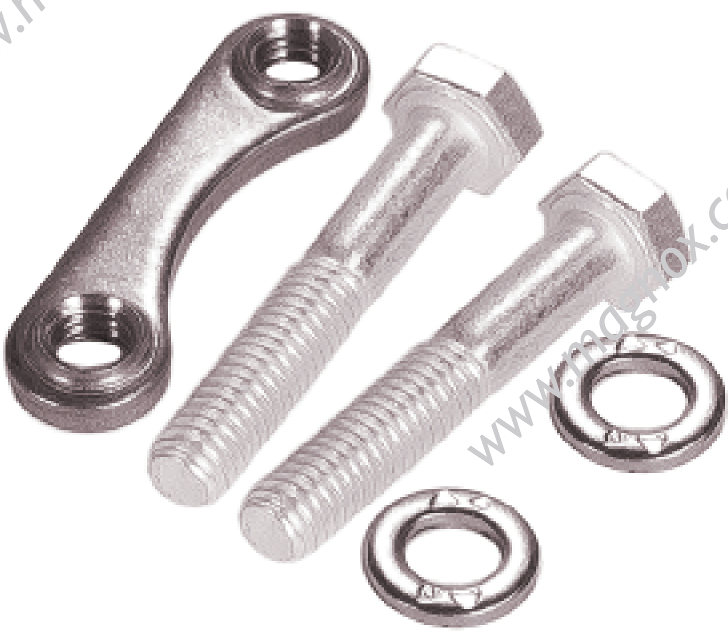


Plate Nuts

Part Number	Nominal Flange Size	Thread Size	Dimensions, mm			
			A	B	C	D
66314-0133	CF 1.33"	8-32	20.32	7.62	13.46	3.81
66314-0275	CF 2.75"	¼-28	40.39	12.70	29.21	4.57
66314-0338	CF 3.38"	5/16 -24	44.45	12.70	27.69	5.59
66314-0450	CF 4.50"	5/16 -24	51.56	12.70	35.31	5.59
66314-0462	CF 4.62"	5/16 -24	44.45	12.70	31.75	5.59
66314-0600	CF 6"	¼ -24	44.45	12.70	28.45	5.59
66314-10000	CF 10"	5/16 -24	44.45	12.70	30.23	5.59
66314-0133M	CF 16"	M4xP0.7	20.32	7.62	13.5	3.2
66314-0275M	CF 35"	M6xP1.0	42.2	12.70	29.5	4.7
66314-0338M	CF 50"	M8xP1.25	44.5	12.70	27.7	5.3
66314-0450M	CF 63"	M8xP1.25	51.6	12.70	35.3	5.3
66314-0462M	CF 80"	M8xP1.25	45.8	12.70	31.6	5.3
66314-0600M	CF 100"	M8xP1.25	41.7	12.70	25.4	5.3
66314-0800M	CF 160"	M8xP1.25	44.45	12.70	28.5	5.3
66314-10000M	CF 200"	M8xP1.25	44.45	12.70	30.2	5.3

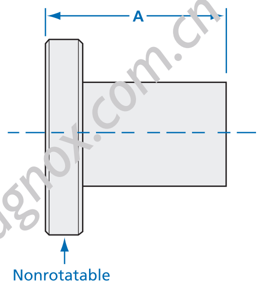
All plate nuts - 24 per package



CF Flanges & Fittings

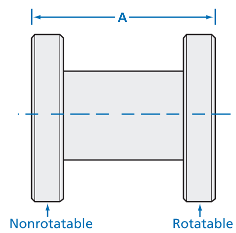
CF Half Nipples

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66315-0133	CF 1.33"	19.05	100/OPTION
66315-0212	CF 2.12"	25.40	100/OPTION
66315-0275	CF 2.75"	38.10	100/OPTION
66315-0338	CF 3.38"	50.80	100/OPTION
66315-0450	CF 4.50"	63.50	100/OPTION
66315-0462	CF 4.62"	76.20	100/OPTION
66315-0600	CF 6.00"	101.60	100/OPTION
66315-0800	CF 8.00"	152.40	100/OPTION
66315-1000	CF 10.00"	203.20	100/OPTION
66315-1325	CF 13.25"	254.00	100/OPTION
66315-1400	CF 14.00"	304.80	100/OPTION



CF Full Nipples

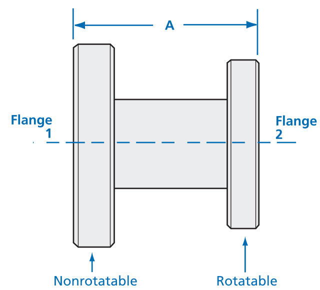
Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66316-0133	CF 1.33"	19.05	100/OPTION
66316-0212	CF 2.12"	25.40	100/OPTION
66316-0275	CF 2.75"	38.10	100/OPTION
66316-0338	CF 3.38"	50.80	100/OPTION
66316-0450	CF 4.50"	63.50	100/OPTION
66316-0462	CF 4.62"	76.20	100/OPTION
66316-0600	CF 6.00"	101.60	100/OPTION
66316-0800	CF 8.00"	152.40	100/OPTION
66316-1000	CF 10.00"	203.20	100/OPTION
66316-1325	CF 13.25"	254.00	100/OPTION
66316-1400	CF 14.00"	304.80	100/OPTION



CF Reducer Nipples

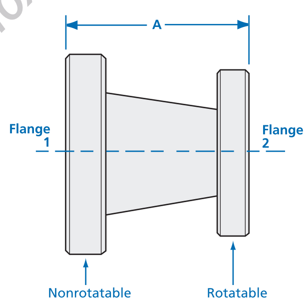
Part Number	Flange Size		Dimensions, mm	
	FlangeI	Flange 2	Tube OD	A
66317-02750133	CF 2.75"	CF 1.33"	33.78	100/OPTION
66317-04500133	CF 4.50"	CF 1.33"	33.78	100/OPTION
66317-04500275	CF 4.50"	CF 2.75"	69.85	100/OPTION
66317-04500338	CF 4.50"	CF 3.38"	85.85	100/OPTION
66317-06000275	CF 6.00"	CF 2.75"	69.85	100/OPTION
66317-08000275	CF 8.00"	CF 2.75"	69.85	100/OPTION
66317-08000450	CF 8.00"	CF 4.50"	114.30	100/OPTION
66317-08000600	CF 8.00"	CF 6.00"	152.40	100/OPTION
66317-10000275	CF 10.00"	CF 2.75"	69.85	100/OPTION
66317-10000450	CF 10.00"	CF 4.50"	114.30	100/OPTION
66317-10000600	CF 10.00"	CF 6.00"	152.40	100/OPTION
66317-10000800	CF 10.00"	CF 8.00"	203.20	100/OPTION
66317-13251000	CF 13.25"	CF 10.00"	254.00	100/OPTION
66317-14001200	CF 14.00"	CF 12.00"	304.80	100/OPTION

可按照需求定制任意长度。例如，需定制CF35*CF16=750MM,订购号为66317-02750133-0750



CF Conical Reducer Nipples

Part Number	Flange Size		Dimensions, mm
	FlangeI OD	FlangeI Tube OD	A
66318-02120133	CF 2.12"	CF 1.33"	51.82
66318-02750133	CF 2.75"	CF 1.33"	78.23
66318-02750212	CF 2.75"	CF 2.12"	69.85
66318-03380212	CF 3.38"	CF 2.12"	70.36
66318-03380275	CF 3.38"	CF 2.75"	71.37
66318-04500133	CF 4.50"	CF 1.33"	75.18
66318-04500275	CF 4.50"	CF 2.75"	75.69
66318-04500338	CF 4.50"	CF 3.38"	104.65
66318-04620275	CF 4.62"	CF 2.75"	104.65
66318-04620338	CF 4.62"	CF 3.38"	108.97
66318-04620450	CF 4.62"	CF 4.50"	108.97
66318-06000338	CF 6.00"	CF 3.38"	112.78
66318-06000450	CF 6.00"	CF 4.50"	110.24



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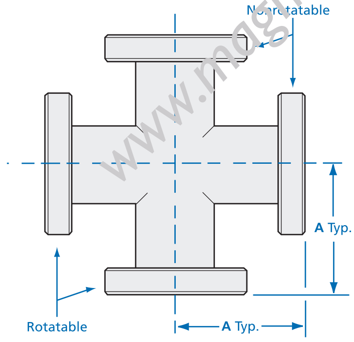
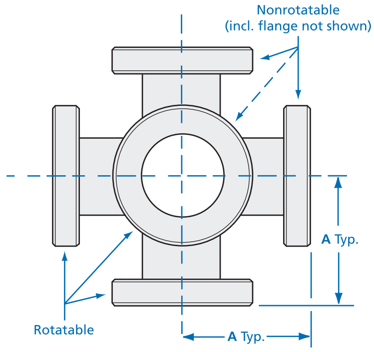


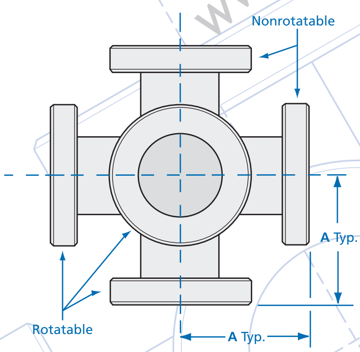
CF 4-Way Crosses

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66326-0133	CF 1.33"	19.05	38.10
66326-0212	CF 2.12"	25.40	52.07
66326-0275	CF 2.75"	38.10	62.48
66326-0338	CF 3.38"	50.80	81.79
66326-0450	CF 4.50"	63.50	85.85
66326-0450H	CF 4.50"	63.50	104.65
66326-0462	CF 4.62"	76.20	89.66
66326-0600	CF 6.00"	101.60	109.73
66326-0600H	CF 6.00"	101.60	134.87
66326-0675	CF 6.75"	127.00	119.63
66326-0800	CF 8.00"	152.40	139.70
66326-0800H	CF 8.00"	152.40	166.62
66326-1000	CF 10.00"	203.20	190.50
66326-1325	CF 13.25"	254.00	254.00



CF 6-Way Crosses

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66327-0133	CF 1.33"	19.05	38.10
66327-0212	CF 2.12"	25.40	52.07
66327-0275	CF 2.75"	38.10	62.48
66327-0338	CF 3.38"	50.80	81.79
66327-0450	CF 4.50"	63.50	85.85
66327-0450H	CF 4.50"	63.50	104.65
66327-0462	CF 4.62"	76.20	89.66
66327-0600	CF 6.00"	101.60	109.73
66327-0600H	CF 6.00"	101.60	134.87
66327-0675	CF 6.75"	127.00	119.63
66327-0800	CF 8.00"	152.40	139.70
66327-0800H	CF 8.00"	152.40	166.62
66327-1000	CF 10.00"	203.20	190.50
66327-1325	CF 13.25"	254.00	254.00



CF 5-Way Crosses

Part Number	Flange Size	Dimensions, mm	
		Tube OD	A
66328-0133	CF 1.33"	19.05	38.10
66328-0212	CF 2.12"	25.40	52.07
66328-0275	CF 2.75"	138.10	62.48
66328-0338	CF 3.38"	50.80	81.79
66328-0450	CF 4.50"	63.50	85.85
66328-0450H	CF 4.50"	63.50	104.65
66328-0462	CF 4.62"	76.20	89.66
66328-0600	CF 6.00"	101.60	109.73
66328-0600H	CF 6.00"	101.60	134.87
66328-0675	CF 6.75"	127.00	119.63
66328-0800	CF 8.00"	152.40	139.70
66328-0800H	CF 8.00"	152.40	166.62
66328-1000	CF 10.00"	203.20	190.50
66328-1325	CF 13.25"	254.00	254.00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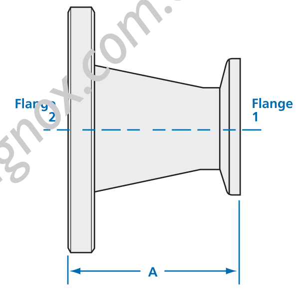
NW to CF Conical Adapter Nipples

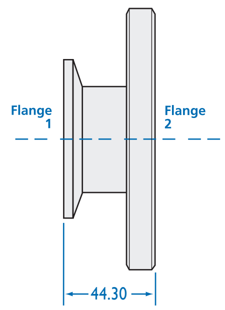
Part Number	Flange Size		Dimensions .mm
	Flange 1	Flange 2	A
66501-16212	NW-16	2.12CF	42.93
66501-16275	NW-16	2.75CF	69.34
66501-25133	NW-25	1.33CF	51.56
66501-25275	NW-25	2.75CF	69.34
66501-25338	NW-25	3.38CF	69.85
66501-40133	NW-40	1.33CF	76.96
66501-40212	NW-40	2.12CF	68.33
66501-40338	NW-40	3.38CF	69.85
66501-40450	NW-40	4.50CF	73.66
66501-40462	NW-40	4.62CF	103.12
66501-50212	NW-50	2.12CF	68.33
66501-50275	NW-50	2.75CF	69.34
66501-50450	NW-50	4.50CF	73.66
66501-50462	NW-50	4.62CF	103.12
66501-50600	NW-50	6.00CF	106.93



NW to CF Adapter Nipples

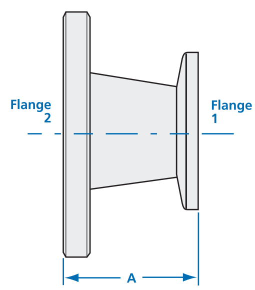
Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	Tube OD
66502-10133	NW-10	1.33 CF	12.70
66502-16133	NW-16	1.33 CF	19.05
66502-25212	NW-25	2.12 CF	25.40
66502-40275	NW-40	2.75 CF	38.10
66502-50133	NW-50	1.33 CF	19.05
66502-50338	NW-50	3.38 CF	50.80

可按照需求定制任意长度。例如，需定制KF40*CF35L=750mm,订购号为66502-40275-0750



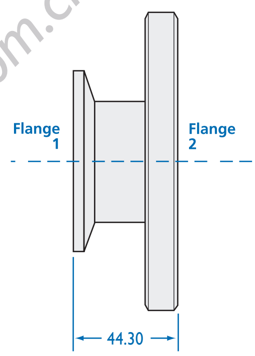
NW to ASA Conical Adapter Nipples

Part Number	Flange Size		Dimensions .mm
	Flange 1	Flange 2	A
66503-25050	NW-25	ASA-5	70.61
66503-40050	NW-40	ASA-5	70.61
66503-40060	NW-40	ASA-6	102.36
66503-50050	NW-50	ASA-5	70.61
66503-50060	NW-50	ASA-6	102.36
66503-50075	NW-50	ASA75	102.36



NW to ASA Adapter Nipples

Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	Tube OD
66504-16050	NW-16	ASA-5	19.05
66504-16060	NW-16	ASA-6	19.05
66504-16075	NW-16	ASA-7.5	19.05
66504-16090	NW-16	ASA-9	19.05
66504-16110	NW-16	ASA-11	19.05
66504-25060	NW-25	ASA-6	25.40
66504-25075	NW-25	ASA-7.5	25.40
66504-25090	NW-25	ASA-9	25.40
66504-25110	NW-25	ASA-11	25.40
66504-40075	NW-40	ASA-7.5	38.10
66504-40090	NW-40	ASA-9	38.10
66504-40110	NW-40	ASA-11	38.10
66504-50090	NW-50	ASA-9	50.80
66504-50110	NW-50	ASA-11	50.80

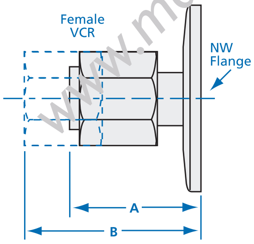


可按照需求定制任意长度。例如，需定制KF16*ASA5" L=750MM,订购号为66504-16050-0750

Note:Add suffix "-G" to model number if O-Ring Groove is required on ASA flange.
Call for ASA groove prices.

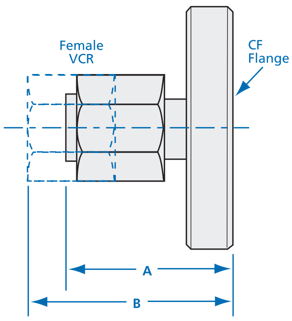
Adapter Fittings

MAGNOX



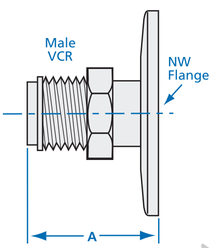
NW Female VCR Adapters

Part Number	Flange Size	VCR Size	Dimensions, mm	
			A	B
66519-1004	NW-10	1/4"	37.08	49.78
66519-1604	NW-16	1/4"	37.08	49.78
66519-2504	NW-25	1/4"	37.08	49.78
66519-4004	NW-40	1/4"	37.08	49.78
66519-5004	NW-50	1/4"	37.08	49.78
66519-1606	NW-16	3/8"	41.91	55.88
66519-2506	NW-25	3/8"	41.91	55.88
66519-4006	NW-40	3/8"	41.91	55.88
66519-5006	NW-50	3/8"	41.91	55.88
66519-1608	NW-16	1/2"	41.91	55.88
66519-2508	NW-25	1/2"	41.91	55.88
66519-4008	NW-40	1/2"	41.91	55.88
66519-5008	NW-50	1/2"	41.91	55.88



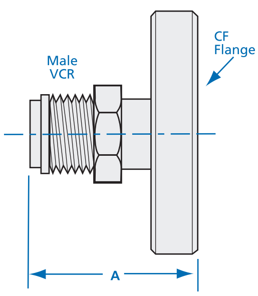
CF Female VCR Adapters

Part Number	Flange Size	VCR Size	Dimensions .mm	
			A	B
66520-133004	1.33CF	1/4"	34.54	47.75
66520-133006	1.33CF	3/8"	39.37	54.10
66520-275004	2.75CF	1/4"	34.54	47.75
66520-275006	2.75CF	3/8"	39.37	54.10



NW Male VCR Adapters

Part Number	Flange Size	Tube OD	Dimensions, mm
			A
66521-1004	NW-10	1/4"	37.08
66521-1604	NW-16	1/4"	37.08
66521-2504	NW-25	1/4"	37.08
66521-4004	NW-40	1/4"	37.08
66521-5004	NW-50	1/4"	37.08
66521-1606	NW-16	3/8"	41.91
66521-2506	NW-25	3/8"	41.91
66521-4006	NW-40	3/8"	41.91
66521-5006	NW-50	3/8"	41.91
66521-1608	NW-16	1/2"	41.91
66521-2508	NW-25	1/2"	41.91
66521-4008	NW-40	1/2"	41.91
66521-5008	NW-50	1/2"	41.91

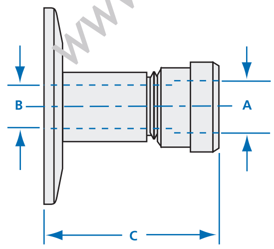


CF Male VCR Adapters

Part Number	Flange Size	VCR Size	Dimensions .mm
			A
66522-133004	1.33CF	1/4"	37.08
66522-133006	1.33CF	3/8"	41.91
66522-275004	2.75CF	1/4"	37.08
66522-275006	2.75CF	3/8"	41.91

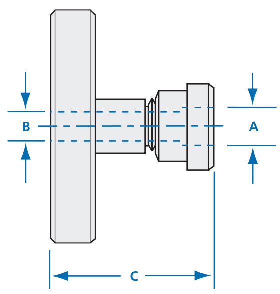
Adapter Fittings

MAGNOX



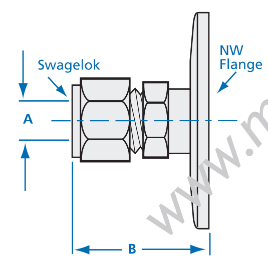
NW Quick Disconnect Adapters

Part Number	Flange Size	Dimensions, mm		
		A	B	C
66523-1004	NW-10	6.35	4.75	37.59
66523-1604	NW-16	6.35	4.75	37.59
66523-2504	NW-25	6.35	4.75	37.59
66523-4004	NW-40	6.35	4.75	37.59
66523-1006	NW-10	9.53	7.14	41.15
66523-1606	NW-16	9.53	7.14	41.15
66523-2506	NW-25	9.53	7.14	41.15
66523-4006	NW-40	9.53	7.14	41.15
66523-1608	NW-16	12.70	10.31	45.47
66523-2508	NW-25	12.70	10.31	45.47
66523-4008	NW-40	12.70	10.31	45.47
66523-5008	NW-50	12.70	10.31	45.47
66523-2512	NW-25	19.05	15.88	49.02
66523-4012	NW-40	19.05	15.88	49.02
66523-5012	NW-50	19.05	15.88	49.02
66523-4016	NW-40	25.40	22.23	49.02
66523-5016	NW-50	25.40	22.23	49.02



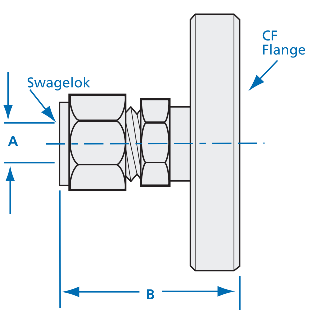
NW Quick Disconnect Adapters

Part Number	Flange Size	Dimensions, mm		
		A	B	C
66524-13304	1.33 CF	6.35	4.76	35.31
66524-13306	1.33 CF	9.53	7.14	38.86
66524-13308	1.33 CF	12.70	10.32	43.18
66524-27504	2.75 CF	6.35	4.76	35.31
66524-27506	2.75 CF	9.53	7.14	38.86
66524-27508	2.75 CF	12.70	10.32	43.18
66524-27512	2.75 CF	19.05	15.88	50.55
66524-27516	2.75 CF	25.40	22.23	51.05



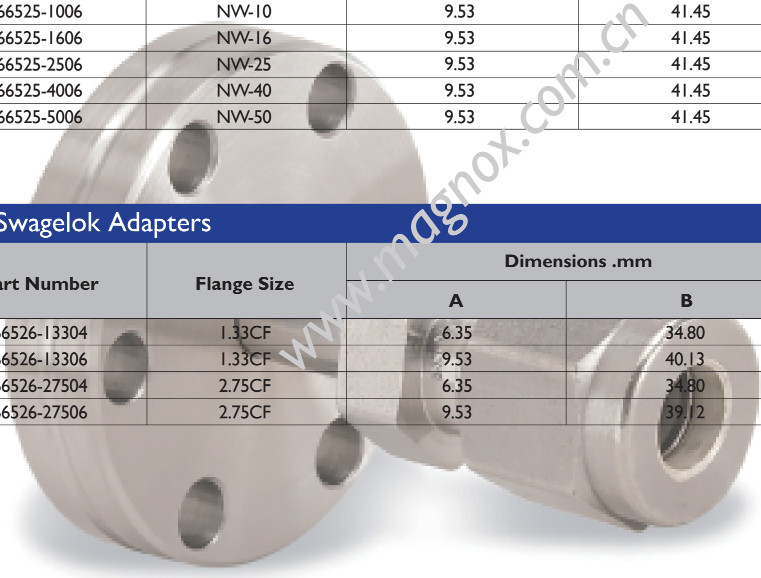
NW Swagelok Adapters

Part Number	Flange Size	Dimensions, mm	
		A	B
66525-1004	NW-10	6.35	37.34
66525-1604	NW-16	6.35	37.34
66525-2504	NW-25	6.35	37.34
66525-4004	NW-40	6.35	37.34
66525-5004	NW-50	6.35	37.34
66525-1006	NW-10	9.53	41.45
66525-1606	NW-16	9.53	41.45
66525-2506	NW-25	9.53	41.45
66525-4006	NW-40	9.53	41.45
66525-5006	NW-50	9.53	41.45



CF Swagelok Adapters

Part Number	Flange Size	Dimensions .mm	
		A	B
66526-13304	1.33CF	6.35	34.80
66526-13306	1.33CF	9.53	40.13
66526-27504	2.75CF	6.35	34.80
66526-27506	2.75CF	9.53	39.12

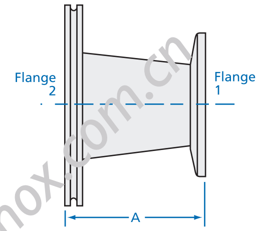


Adapter Fittings

MAGNOX

NW to ISO Conical Adapter Nipples

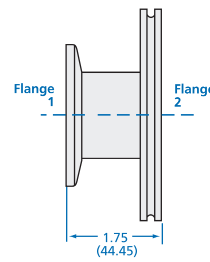
Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	A
66505-40063	NW-40	ISO-63	70.61
66505-40080	NW-40	ISO-80	102.36
66505-50063	NW-50	ISO-63	70.61
66505-50080	NW-50	ISO-80	102.36
66505-50100	NW-50	ISO-100	102.36



NW to ISO Adapter Nipples

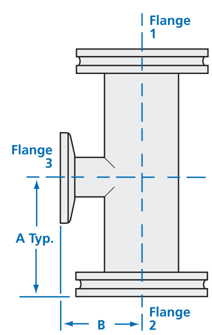
Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	Tube OD
66514-16063	NW-16	ISO-63	19.05
66514-25063	NW-25	ISO-63	25.40
66514-25080	NW-25	ISO-80	25.40
66514-25100	NW-25	ISO-100	25.40
66514-40100	NW-40	ISO-100	38.10
66514-50160	NW-50	ISO-160	50.80

可按照需求定制任意长度。例如，需定制KF16*ISO63 L=750MM,订购号为66514-16063-0750



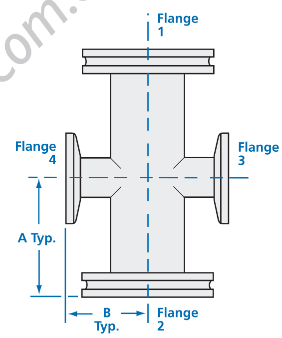
NW to ISO Adapter Tees

Part Number	Flange Size		Dimensions, mm	
	Flange 1&2	Flange 3	A	B
66506-40063	ISO-63	NW-40	82.55	73.66
66506-40080	ISO-80	NW-40	88.90	80.01
66506-40100	ISO-100	NW-40	104.90	92.71
66506-40160	ISO-160	NW-40	136.65	118.11
66506-50063	ISO-63	NW-50	82.55	86.36
66506-50080	ISO-80	NW-50	88.90	92.71
66506-50100	ISO-100	NW-50	104.90	105.41
66506-50160	ISO-160	NW-50	136.65	130.81



NW to ISO Adapter Crosses

Part Number	Flange Size		Dimensions, mm	
	Flange 1&2	Flange 3&4	A	B
66507-40063	ISO-63	NW-40	82.55	73.66
66507-40080	ISO-80	NW-40	88.90	80.01
66507-40100	ISO-100	NW-40	104.90	92.71
66507-40160	ISO-160	NW-40	136.65	118.11
66507-50063	ISO-63	NW-50	82.55	86.36
66507-50080	ISO-80	NW-50	88.90	92.71
66507-50100	ISO-100	NW-50	104.90	105.41
66507-50160	ISO-160	NW-50	136.65	130.81



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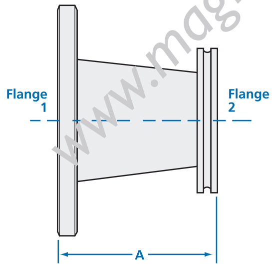
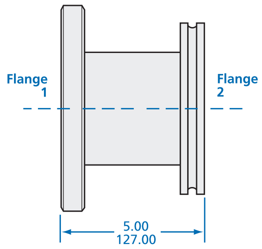


NW to ISO Conical Adapter Nipples

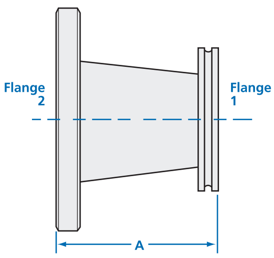
Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	A
66508-275063	2.75 CF	ISO-63	71.38
66508-275080	2.75 CF	ISO-80	103.63
66508-338063	3.38 CF	ISO-63	72.39
66508-338080	3.38 CF	ISO-80	104.14
66508-338100	3.38 CF	ISO-100	104.14
66508-450080	4.50 CF	ISO-80	107.95
66508-450100	4.50 CF	ISO-100	107.95
66508-462063	4.62 CF	ISO-63	105.66
66508-462100	4.62 CF	ISO-100	105.66
66508-600063	6.00 CF	ISO-63	109.47
66508-600080	6.00 CF	ISO-80	109.47



CF to ISO Adapter Nipples

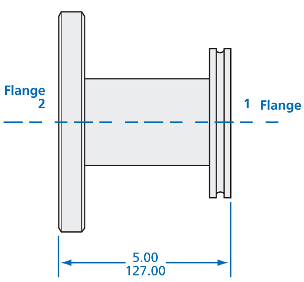
Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	A
66509-0450063	4.50 CF	ISO-63	63.50
66509-0462080	4.62 CF	ISO-80	76.20
66509-0600100	6.00CF	ISO-100	101.60
66509-0800160	8.00 CF	ISO-160	152.40
66509-1000200	10.00 CF	ISO-200	203.20

注：可按照需求定制任意长度。例如，需定制CF4.5*ISO63 L=750mm，订购号为66509-0450063-0750



ISO to ASA Conical Adapter Nipples

Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	Tube OD
66510-063050	ISO-63	ASA-5	73.15
66510-063060	ISO-63	ASA-6	104.90
66510-063075	ISO-63	ASA-7.5	104.90
66510-080050	ISO-80	ASA-5	104.90
66510-100075	ISO-100	ASA-7.5	104.90
66510-100050	ISO-100	ASA-5	104.90



ISO to ASA Adapter Nipples

Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	Tube OD
66511-063110	ISO-63	ASA-11	63.50
66511-080060	ISO-80	ASA-6	76.20
66511-080110	ISO-80	ASA-11	76.20
66511-100075	ISO-100	ASA-7.5	101.60
66511-100090	ISO-100	ASA-9	101.60
66511-100110	ISO-100	ASA-11	101.60
66511-160090	ISO-160	ASA-9	152.40
66511-160110	ISO-160	ASA-11	152.40
66511-200110	ISO-200	ASA-11	203.20
66511-200135	ISO-200	ASA-13.5	203.20

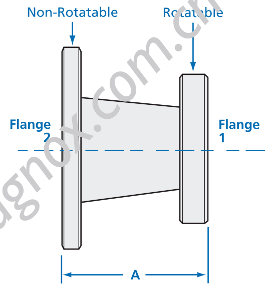
注：可按照需求定制任意长度。例如，需定制ISO63*ASA-11 L=750mm，订购号为66511-063110-0750

Adapter Fittings

MAGNOX

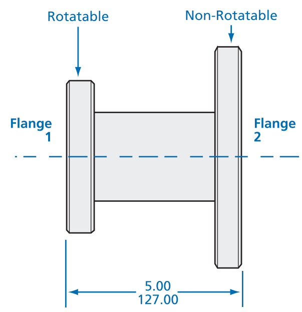
CF to ASA Conical Adapter Nipples

Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	A
66512-21250	2.12CF	ASA-5	70.87
66512-27550	2.75CF	ASA-5	71.88
66512-27560	2.75CF	ASA-6	103.63
66512-33850	3.38CF	ASA-5	72.38
66512-33860	3.38CF	ASA-6	104.14
66512-33875	3.38CF	ASA-7.5	104.14
66512-45050	4.50CF	ASA-5	76.20
66512-45060	4.50CF	ASA-6	107.95
66512-45075	4.50CF	ASA-7.5	107.95
66512-46250	4.62CF	ASA-5	105.66
66512-46275	4.62CF	ASA-7.5	105.66
66512-60050	6.00CF	ASA-5	109.47
66512-60060	6.00CF	ASA-6	109.47



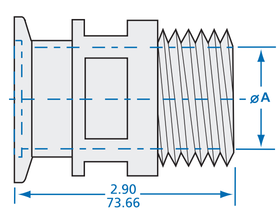
CF to ASA Adapter Nipples

Part Number	Flange Size		Dimensions, mm
	Flange 1	Flange 2	Tube OD
66513-0133050	1.33 CF	ASA-5	19.05
66513-0133060	1.33 CF	ASA-6	19.05
66513-0212060	2.12 CF	ASA-6	25.40
66513-0462060	4.62 CF	ASA-6	76.20
66513-0133075	1.33 CF	ASA-75	19.05
66513-0212075	2.12 CF	ASA-7.5	25.40
66513-0275075	2.75 CF	ASA-7.5	38.10
66513-0133090	1.33 CF	ASA-9	19.05
66513-0212090	2.12 CF	ASA-9	25.40
66513-0275090	2.75CF	ASA-9	38.10
66513-0338090	3.38 CF	ASA-9	50.80
66513-0450090	4.50 CF	ASA-9	63.50
66513-0462090	4.62 CF	ASA-9	76.20
66513-0600090	6.00 CF	ASA-9	101.60
66513-0133110	1.33 CF	ASA-11	19.05
66513-0212110	2.12 CF	ASA-11	25.40
66513-0275110	2.75 CF	ASA-11	38.10
66513-0338110	3.38 CF	ASA-11	50.80
66513-0450110	4.50 CF	ASA-11	63.50
66513-0462110	4.62 CF	ASA-11	76.20
66513-0600110	6.00CF	ASA-11	101.60
66513-0800110	8.00CF	ASA-11	152.40
66513-0133135	1.33 CF	ASA-13.5	19.05
66513-0212135	2.12 CF	ASA-13.5	25.40
66513-0275135	2.75 CF	ASA-13.5	38.10
66513-0338135	3.38 CF	ASA-13.5	50.80
66513-0450135	4.50 CF	ASA-13.5	63.50
66513-0462135	4.62 CF	ASA-13.5	76.20
66513-0600135	6.00 CF	ASA-13.5	101.60
66513-0800135	8.00 CF	ASA-13.5	152.40
66513-1000135	10.00 CF	ASA-13.5	203.20



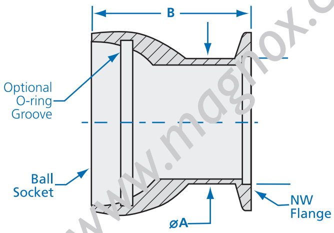
NW Welch Pump Adapters

Part Number	Flange Size	Dimensions, mm	
		Thread	A
66515-1603813	KF16	¾-18 NPSM x1.00	11.43
66515-1603420	KF16	¾-20 NPSM x1.00	14.28
66515-2503420	KF25	¾-20 NPSM x1.00	14.23
66515-2510020	KF25	1-20 NPSM x1.00	19.05
66515-4010020	KF40	1-20 NPSMx 1.00	19.05
66515-4011212	KF40	1½-12 NPSM x 1.00	28.58
66515-4013420	KF40	1¾-20 NPSMx1.00	34.93
66515-5013420	KF50	1¾-20 NPSM x1.00	34.93



Adapter Fittings

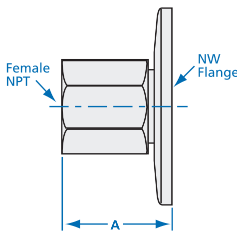
NW Ball Socket Adapters



Part Number	Dimensions, mm				
	Ball Socket	Flange Type	Tube OD A	A	B
66516-405030	50/30	NW-40	38.10	48.26	-
66516-405030G	50/30	NW-40	38.10	48.26	2-224
66516-507550	75/50	NW-50	50.80	67.31	-
66516-507550G	75/50	NW-50	50.80	67.31	2-232

Note:"G" in model number indicates O-ring and O-ring groove.

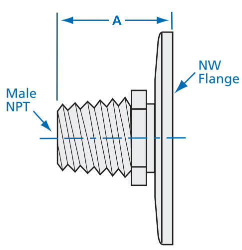
NW Female Pipe Adapters



Part Number	Flange Size	Thread Szie	Dimensions, mm
			A
66517-1002	KF10	1/8"	23.37
66517-1602	KF16	1/8"	23.37
66517-2502	KF25	1/8"	23.37
66517-4002	KF40	1/8"	23.37
66517-5002	KF50	1/8"	23.37
66517-1004	KF10	1/4"	27.18
66517-1604	KF16	1/4"	27.18
66517-2504	KF25	1/4"	27.18
66517-4004	KF40	1/4"	27.18
66517-5004	KF50	1/4"	27.18
66517-1608	KF16	1/2"	36.58
66517-2508	KF25	1/2"	35.31
66517-4008	KF40	1/2"	35.31
66517-5008	KF50	1/2"	35.31
66517-2510	KF25	3/4"	36.83
66517-4010	KF40	3/4"	36.83
66517-5010	KF50	3/4"	36.83
66517-2512	KF25	1"	39.88
66517-4012	KF40	1"	39.88
66517-5012	KF50	1"	39.88

注:此产品示意图仅供参考,具体工艺及尺寸请咨询销售。
需求的螺纹规格不同在订购号最后一位加对应的螺纹首字母,如要KF25"1/4"NPT内螺纹,订购号为66517-2504-N。

NW Male Pipe Adapters



Part Number	Flange Size	Thread Szie	Dimensions, mm
			A
66518-1002	KF10	1/8"	22.61
66518-1602	KF16	1/8"	22.61
66518-2502	KF25	1/8"	22.61
66518-4002	KF40	1/8"	22.61
66518-5002	KF50	1/8"	22.61
66518-1004	KF10	1/4"	27.94
66518-1604	KF16	1/4"	27.94
66518-2504	KF25	1/4"	27.94
66518-4004	KF40	1/4"	27.94
66518-5004	KF50	1/4"	27.94
66518-1608	KF16	1/2"	34.29
66518-2508	KF25	1/2"	34.29
66518-4008	KF40	1/2"	34.29
66518-5008	KF50	1/2"	34.29
66518-2512	KF25	3/4"	34.29
66518-4012	KF40	3/4"	34.29
66518-5012	KF50	3/4"	34.29
66518-2516	KF25	1"	41.66
66518-4016	KF40	1"	41.66
66518-5016	KF50	1"	41.66

注:此产品示意图仅供参考,具体工艺及尺寸请咨询销售。
需求的螺纹规格不同在订购号最后一位加对应的螺纹首字母,如要KF25"1/4"NPT外螺纹,订购号为66518-2504-N。

MAGNOX

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	BA
F4	EP
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。

Bellows & Flexible Hose

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

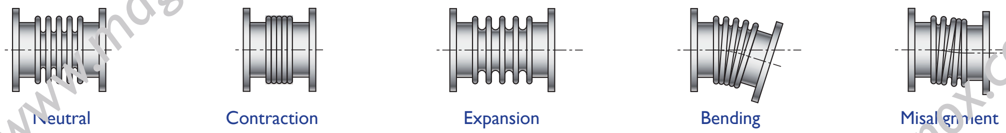
Flexible Hoses Technical Data
普通波纹管技术参数

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

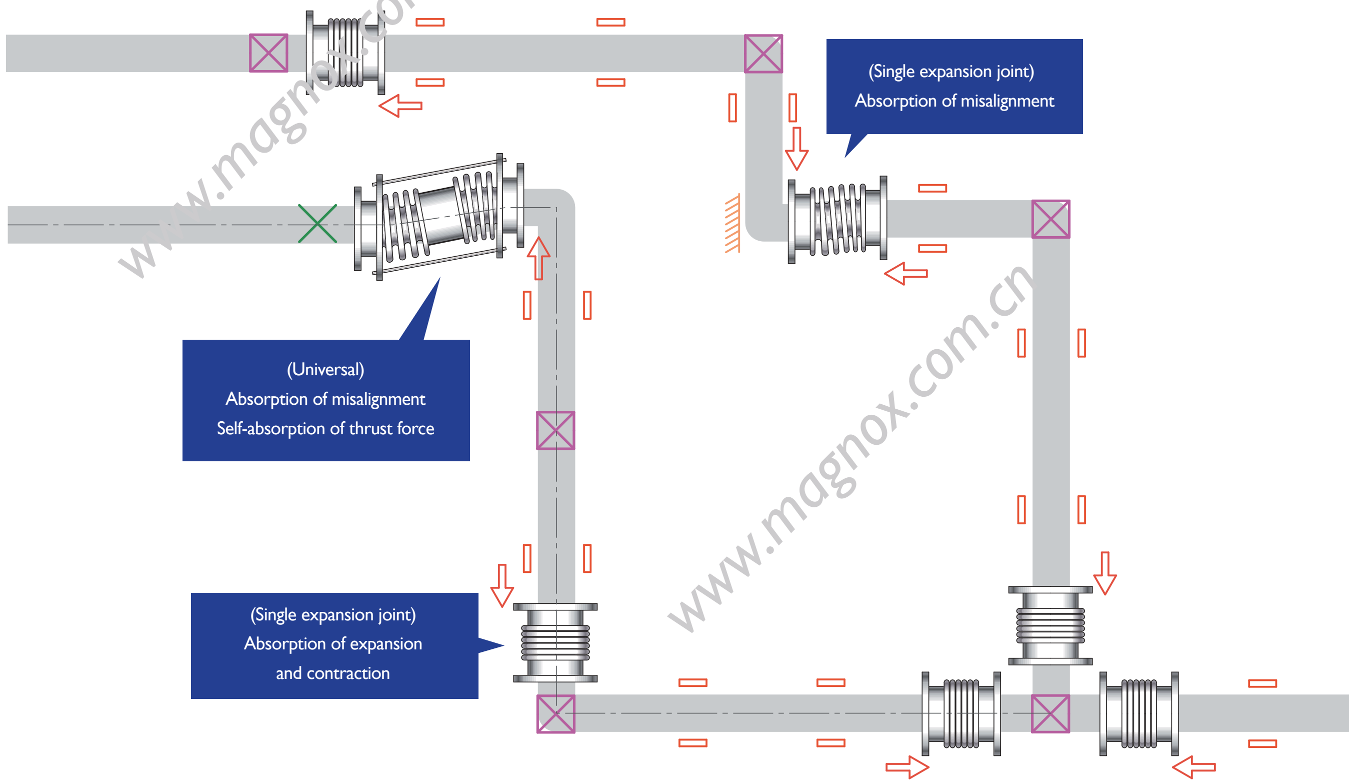
Basic Motions Of Bellows Expansion Joints
波纹管基本运动形式

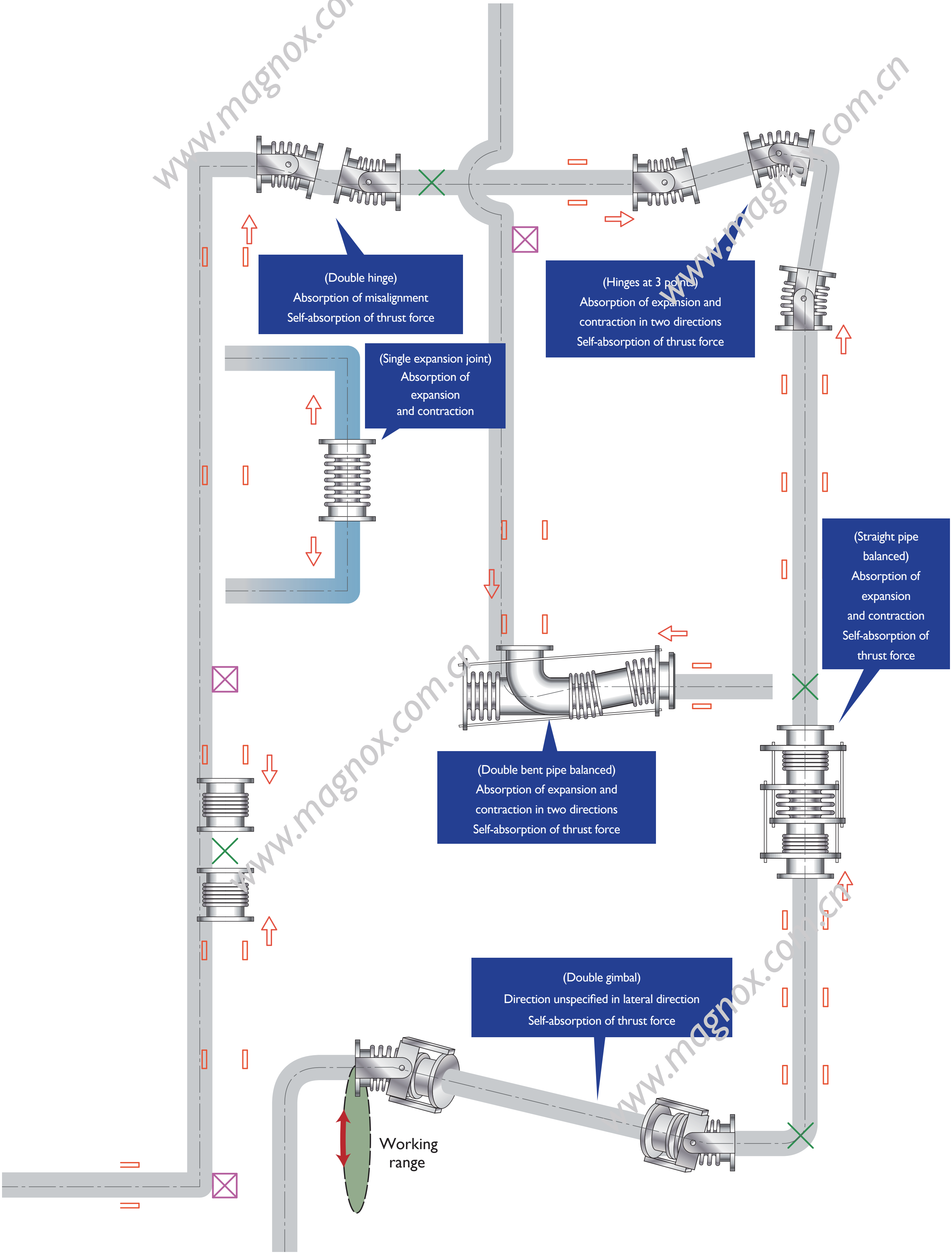


Examples Of Application Of Bellows Expansion Joints
应用实例介绍

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		





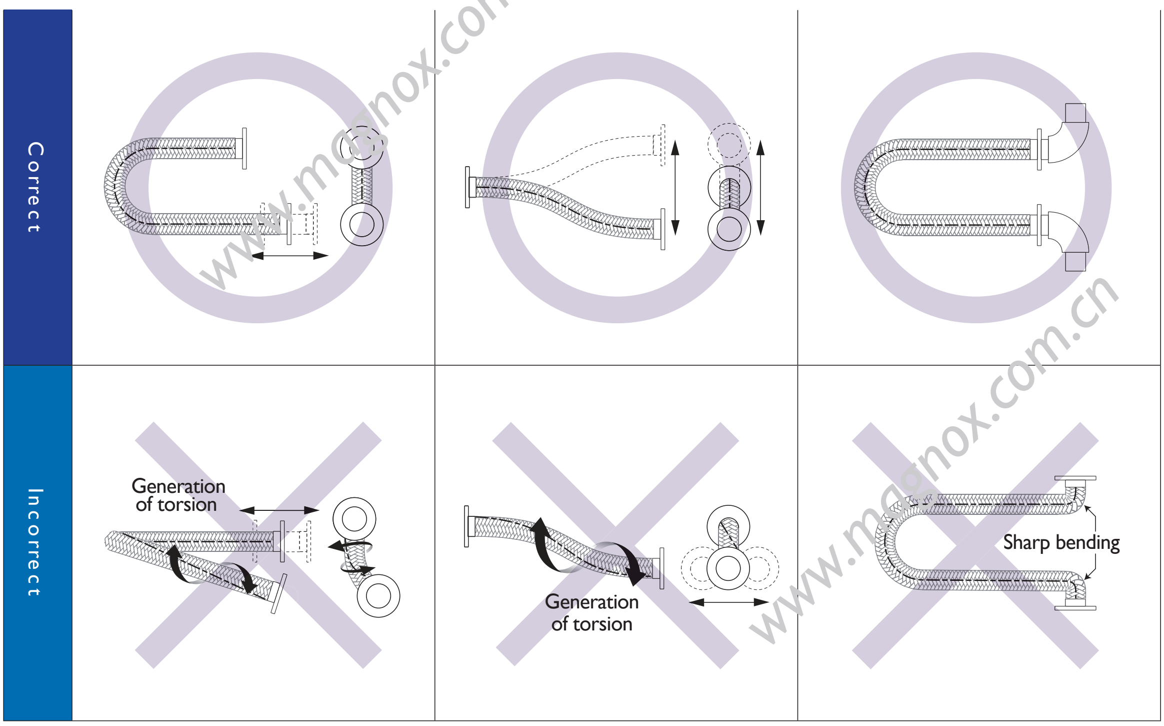
(Double hinge)
Absorption of misalignment
Self-absorption of thrust force
(Hinges at 3 points)
Absorption of expansion and
contraction in two directions
Self-absorption of thrust force
(Single expansion joint)
Absorption of
expansion
and contraction
(Straight pipe
balanced)
Absorption of
expansion
and contraction
Self-absorption of
thrust force
(Double bent pipe balanced)
Absorption of expansion and
contraction in two directions
Self-absorption of thrust force
(Double gimbal)
Direction unspecified in lateral direction
Self-absorption of thrust force
Working
range

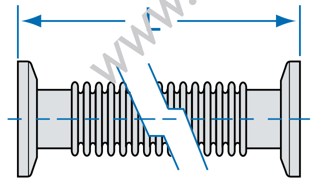
Instructions common to flexible hoses and bellows

- 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

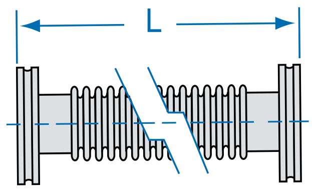
- When installing any flexible hose, do not apply torsion to it. To prevent damage owing to torsion during installation, it is recommended to use a joint, such as a loose fl ange, union joint or SNM joint, which can prevent torsion at one end of the tube.
- Do not install any flexible hose in such a 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





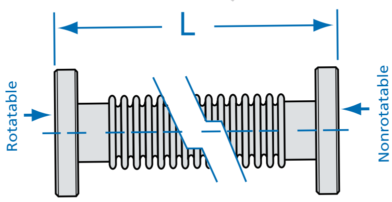
KF Bellows

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

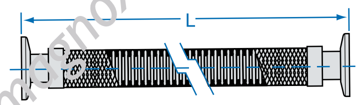


CF Bellows

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

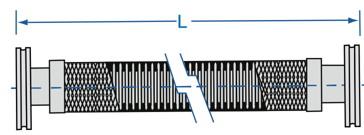
KF Flexible Braided Coupling

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



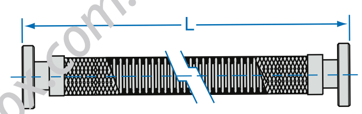
ISO Flexible Braided Coupling

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



MAGNOX

Vacuum Insulation Double-layer Flexible Hoses

真空双层绝热软管

Features

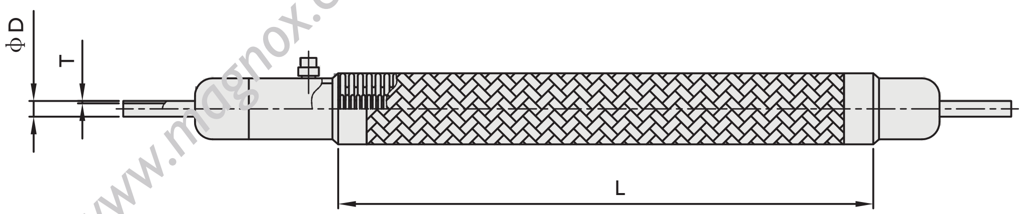
- Remarkably high flexibility
- The excellent heat insulating performance minimizes evaporation of the internal fluid.

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 · m^3 /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	1000~3000	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		终端接口形式A	
4	1/4"	TW	TUBE
6	3/8"	SW	Lok
8	1/2"	VM	Male VCR
12	3/4"	VF	Fmale VCR
16	1"	OF	Fmale VCO
6M	6mm	OM	Male VCO
8M	8mm	QF	Quick Fittings
10M	10mm	NM	Male NPT
12M	12mm	NF	Fmale NPT
20M	20mm	PM	Male PT
25M	25mm	PF	Fmale PT
		GM	G螺纹外丝
		GF	G螺纹内丝

终端接口尺寸		终端接口形式B	
4	1/4"	TW	TUBE
6	3/8"	SW	Lok
8	1/2"	VM	Male VCR
12	3/4"	VF	Fmale VCR
16	1"	OF	Fmale VCO
6M	6mm	OM	Male VCO
8M	8mm	QF	Quick Fittings
10M	10mm	NM	Male NPT
12M	12mm	NF	Fmale NPT
20M	20mm	PM	Male PT
25M	25mm	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

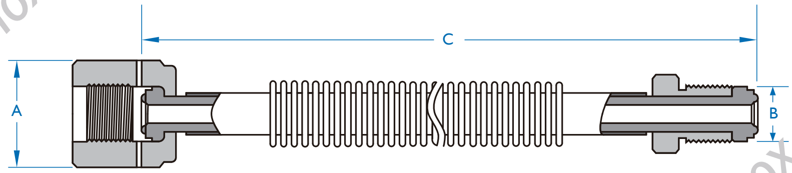
内表面处理	
BLANK	BA
F4	EP

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。

Gas Line Bellows

MAGNOX

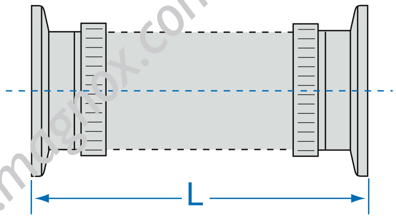


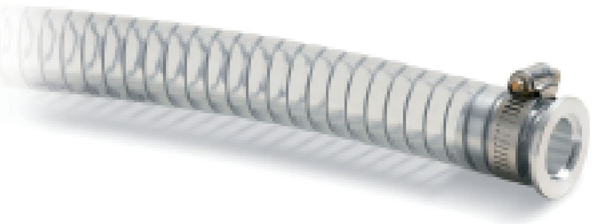
Inlet Type	Dimension,mm		
	A	B	C
Lok-Lok	1/4"Lok	1/4"Lok	OPTION
	3/8"Lok	3/8"Lok	OPTION
	1/2"Lok	1/2"Lok	OPTION
	3/4"Lok	3/4"Lok	OPTION
	1"Lok	1"Lok	OPTION
MVCR-MVCR	1/4"MVCR	1/4"MVCR	OPTION
	3/8"MVCR	3/8"MVCR	OPTION
	1/2"MVCR	1/2"MVCR	OPTION
	3/4"MVCR	3/4"MVCR	OPTION
	1"MVCR	1"MVCR	OPTION
FVCR-FVCR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

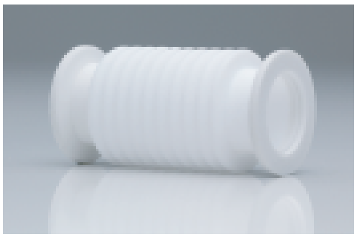




Teflon Bellows with NW Flanges

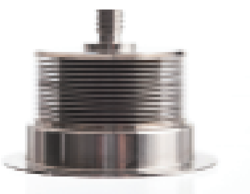
Part Number	Flange Size	Dimensions, mm
		L
66709-0016	KF16	100/OPTION
66709-0025	KF25	100/OPTION
66709-0040	KF40	100/OPTION
66709-0050	KF50	100/OPTION

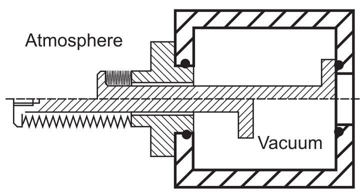
可按照需求定制任意长度。例如，需定制KF25 L=750mm,订购号为66709-0025-0750



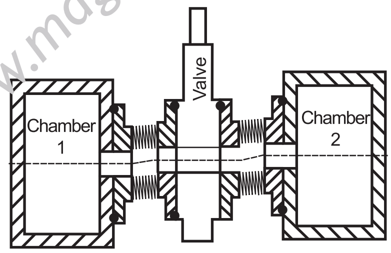
Introduction To Welded Metal Bellows
金属焊接波纹管介绍

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).

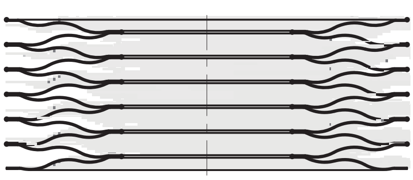
welded metal bellows are often used for vibration decoupling,e.g., between vacu.um pump and measuring instrument.A special design of the compensator causes a better vibration isolation by an increased number of diaphragm pairs, but enlarges the risk of self-resonance.

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

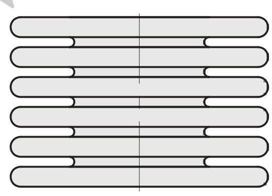
- High flexibility
- Lowest assembly dimension
- For highest demands in UHV applications
- Lower spring forces
- Variable web width (OD-ID)
- Almost unlimited bellow length
- Non-circular shapes available (racetrack, rectangular)

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

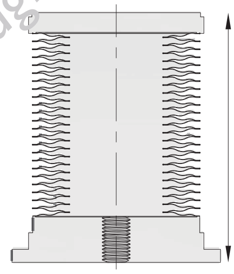
The following movements are possible:

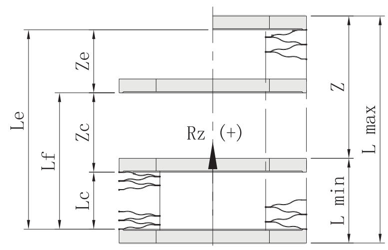
- Axial
- Lateral
- Angular

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.



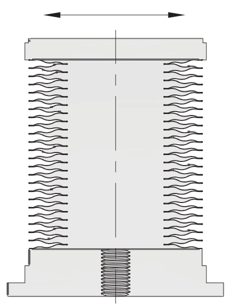


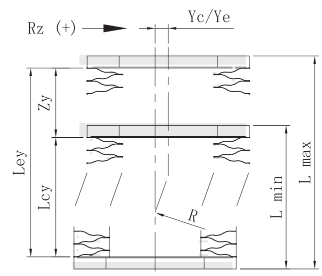
Abbreviations axial

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.



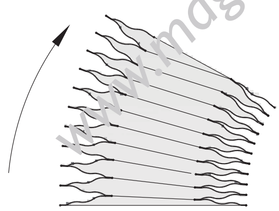


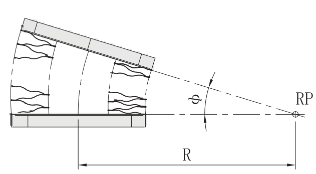
Abbreviations lateral

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

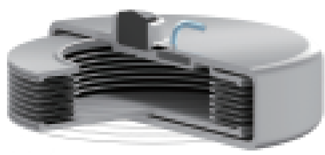
Φ=Φ/MPxn

Welded Metal Bellows

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 fittings.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

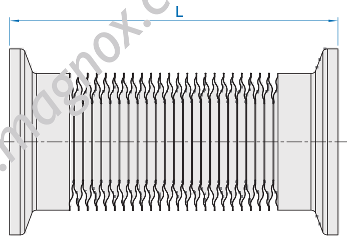
Important hint: The choice of material has to be made based on the specific requirements of the application

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.

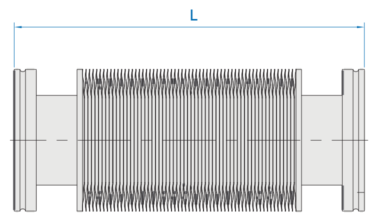
KF Flanges Edge Weld Bellows

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



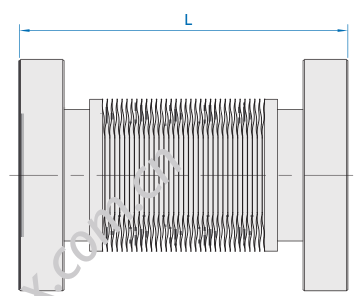
ISO Flanges Edge Weld Bellows

Part Number	Flange Size	Dimensions, mm
		L
66711-0063	IS063	100/OPTION
66711-0080	IS080	100/OPTION
66711-0100	IS0100	100/OPTION
66711-0160	IS0160	100/OPTION
66711-0200	IS0200	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



Welded Metal Bellows

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

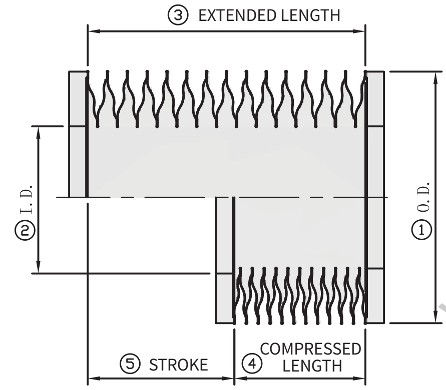
Weapon Systems

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/cm^2.
真空端: 内部

Outside ________________ kg/cm^2
外部

⑨ Temperature: ________________ ℃
使用温度:

⑪ Leak Rate：________________ pa*m^3/s He
泄漏率:

⑩ Gas or Fluid: ________________
腔体内使用流体(气体/液体):

⑬ Flange material: ________________
法兰材料:

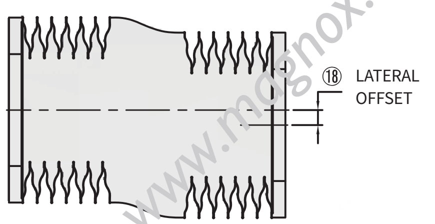
⑫ Bellows Capsule Material: ________________
波纹管材料:

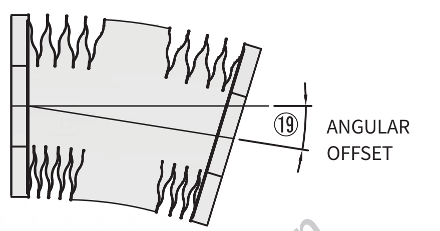
⑮ Shaft size: ________________ mm
波纹管内部轴直径:

⑭ Spring rate: ________________ /mm
弹性系数:

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

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





⑱ Lateral Offset:________________ mm
侧向偏移:

⑲ Angular Oifset:________________ deg
角度偏移:

※ memo 其他事项要求

MEMO


MAGNOX

Tube & Butt Weld Fittings

Chemical Composition (%)
化学成分

ASTM 标准	C	Si	Mn	P	S	Ni	Cr	Mo
304	≦ 0.080	≦ 1.00	≦ 2.00	≦ 0.045	≦ 0.030	8.00 – 11.00	18.00 – 20.00	-
304L	≦ 0.035	≦ 1.00	≦ 2.00	≦ 0.045	≦ 0.030	8.00 – 12.00	18.00 – 20.00	-
316	≦ 0.080	≦ 1.00	≦ 2.00	≦ 0.045	≦ 0.030	10.00 – 14.00	16.00 – 18.00	2.00 – 3.00
316L	≦ 0.035	≦ 1.00	≦ 2.00	≦ 0.045	≦ 0.030	12.00 – 16.00	16.00 – 18.00	2.00 – 3.00
316L VAR	0.015 – 0.030	≦ 1.00	1.00 – 1.50	≦ 0.045	0.005 – 0.012	12.00 – 16.00	16.00 – 18.00	2.00 – 3.00
316L VIM+VAR	0.015 – 0.030	≦ 1.00	0.15 – 0.40	≦ 0.045	0.005 – 0.010	12.00 – 16.00	16.00 – 18.00	2.00 – 3.00

Characteristics
材料特性

	机械							抗氧化 临界温度	
ASTM	拉伸 强度 (N/mm²)	屈服 强度 (N/mm²)	延伸率 (%)	比重	热膨胀 X 10-6 0 - 100°C	比电阻 (10-8Ωm)	比热 0 - 100°C kj / (kg.°C)	连续使用 (°C)	间歇使用 (°C)
304	≧ 520	≧ 205	≧ 30	7.93	17.3	72	0.5	900	810
304L	≧ 480	≧ 175	≧ 30	7.93	17.3	72	0.5	900	810
316	≧ 520	≧ 205	≧ 30	7.98	16.0	74	0.5	900	810
316L	≧ 480	≧ 175	≧ 30	7.98	16.0	74	0.5	900	810

Cleaned Quality Assurance Values
清洁质量保证值

检测项目	保证值					
	AP	等级	BA 等级	MP + EP 等级	EP	等级
含油量测定	≦ 0.1mg/ft²		≦ 0.01mg/ft²			
颗粒计数	≦ 0.3μm 颗粒的数量 ≦ 5/cf		≦ 0.1μm 颗粒的数量 ≦ 5/cf		≦ 0.1μm 颗粒的数量 ≦ 5/cf	
液体电阻率测量	-		≧ 0.5MΩ-cm			
离子色谱分析	-		≦ 10ng/cm²		≦ 5ng/cm²	
露点测量	-		≦ -75°C			

MAGNOX

Dimensional Tolerance
尺寸公差

<table>
<tr><th rowspan="2">Item</th><th rowspan="2">Products</th><th colspan="5">Normal Pipe Size</th></tr>
<tr><th>1/8" ~ 3/8"</th><th>8A ~ 10A
1/2" ~ 3/4"</th><th>15A ~ 65A
1" ~ 3"</th><th>80A ~ 200A
4" ~ 6"</th><th>250A ~ 300A</th></tr>
<tr><td rowspan="4">Pipe Fitting
Header
Joint-Header
Multi-Tee</td><td>Outside Diameter at End (OD)</td><td>±0.1mm</td><td colspan="4">±1%</td></tr>
<tr><td>Wall Thickness at End (T)</td><td colspan="5">Either Bigger ±0.2mm or ±20%</td></tr>
<tr><td>Straight End Length (L)</td><td colspan="5">+ Not Specified - 0.4mm</td></tr>
<tr><td>Thinning Length (J)</td><td colspan="5">+ Not Specified - 0</td></tr>
<tr><td>Elbow, D-Elbow</td><td>Bend Radius (R)</td><td colspan="2">±0.8mm</td><td colspan="2">±1.6mm</td><td>±3.2mm</td></tr>
<tr><td>Elbow, D-Elbow,
Tee, Joint-Tee
D-Tee, Header
Joint-Header, Multi-Tee</td><td>Center to End (A·B ·C ·M)</td><td colspan="2">±0.8mm</td><td colspan="2">±1.6mm</td><td>±3.2mm</td></tr>
<tr><td>Lap Joint
Pipe Flange</td><td>Length (FF FP)</td><td colspan="2">±0.8mm</td><td colspan="2">±1.6mm</td><td>±3.2mm</td></tr>
<tr><td>Cap, 180° Return Bend</td><td>Back to End (E, BH)</td><td colspan="2">±0.8mm</td><td colspan="3">±3.2mm</td></tr>
<tr><td>Reducer, Cap Reducer
J-Reducer, J-Cap
Outside-Diameter-Changeable Fitting
Wall-Thickness-Changeable Fitting</td><td>Over All Length (H, Q)</td><td colspan="2">±0.8mm</td><td colspan="2">±1.6mm</td><td>±3.2mm</td></tr>
<tr><td rowspan="2">Lap Joint</td><td>Thickness of Lap (t)</td><td colspan="5">10A +1.6mm
- 0</td></tr>
<tr><td>Diameter of Lap (G)</td><td colspan="2">10A</td><td colspan="2">+0mm
- 0.8</td><td>+0mm
-1.6</td></tr>
<tr><td rowspan="3">Header
Joint-Header
Multi-Tee</td><td>Length of End (EL)</td><td colspan="5">±1.6mm</td></tr>
<tr><td>Branch Pitch (P)</td><td colspan="3">±1.6mm</td><td colspan="2">±3.2mm</td></tr>
<tr><td>Total Length (L)</td><td colspan="5">+5mm
-0</td></tr>
</table>

MAGNOX

Tube Fittings Ordering Information
管件订购信息

S40 — 66754 — 0150 0100 — F4

材质	
W40	SUS316L焊管
W10	SUS304焊管
S40	SUS316L无缝管
S10	SUS304 无缝管
S40V	SUS316L VAR无缝管
S40W	SUS316L VIM+VAR无缝管

产品系列	
66751	180°Elbow
66752	45°Elbow
66760	90°Elbow
66761	90°Mitered Elbow
66762	Reducer
66753	Equal Tee
66754	Reducer Tee
66755	4 Way Crosses
66756	5 Way Crosses
66757	6 Way Crosses
66758	Reducer Crosses

主管尺寸		支管尺寸	
0050	1/2"	0050	1/2"
0075	3/4"	0075	3/4"
0100	1"	0100	1"
0150	1 1/2"	0150	1 1/2"
0200	2"	0200	2"
0250	2 1/2"	0250	2 1/2"
0300	3"	0300	3"
0400	4"	0400	4"
0600	6"	0600	6"

表面处理	
BLANK	BA Ra≤0.8μm
F1	BA Ra≤0.13μm
F2	BA Ra≤0.18μm
F3	BA Ra≤0.25μm
F4	EP Ra≤0.375μm
F5	MP Ra≤0.8μm
F6	AP Ra≤2.50μm

说明

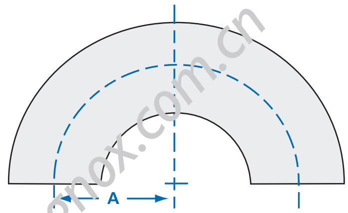
1、支管尺寸选项仅适用于三通和大小头，当支管尺寸与主管尺寸相同时，支管尺寸代码将被省略。
2、型号说明仅用于说明型号组成规则，有些组合实际并不存在。
如有疑问请联系迈格诺科销售代表。

Tube & Butt Weld Fittings

MAGNOX

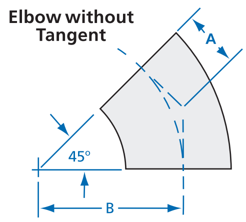
180° Return Bend Radius Elbows

Part Number	Dimensions, mm		
	Tube OD	Wall Thickness	A
66751-0050	12.70	1.24	19.05
66751-0075	19.05	1.65	28.70
66751-0100	25.40	1.65	38.10
66751-0150	38.10	1.65	57.15
66751-0200	50.80	1.65	76.20



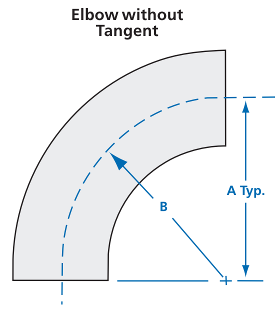
45°Radius Elbows

Part Number	Dimensions, mm			
	Tube OD	Wall Thickness	A	B
66752-0050	12.70	1.24	7.87	19.05
66752-0075	19.05	1.65	11.91	28.70
66752-0100	25.40	1.65	15.75	38.10
66752-0150	38.10	1.65	23.62	57.15
66752-0200	50.80	1.65	31.50	76.20
66752-0250	63.50	1.65	39.37	95.25
66752-0300	76.20	1.65	47.24	114.30
66752-0400	101.60	2.11	63.25	152.40
66752-0600	152.40	2.77-3.40	94.74	228.60



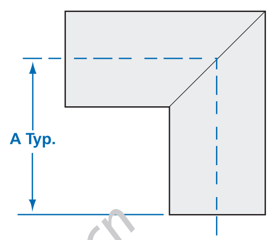
90° Radius Elbows

Part Number	Dimensions, mm			
	Tube OD	Wall Thickness	A	B
66760-0050	12.70	1.24	19.05	19.05
66760-0075	19.05	1.65	28.63	28.70
66760-0100	25.40	1.65	3810	38.10
66760-0150	38.10	1.65	57.15	57.15
66760-0200	50.80	1.65	76.20	76.20
66760-0250	63.50	1.65	95.25	95.25
66760-0300	76.20	1.65	114.30	114.30
66760-0400	101.60	2.11	152.40	152.40
66760-0600	152.40	2.77-3.40	228.60	228.60



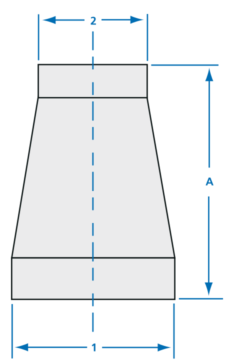
90° Mitered Elbow

Part Number	Dimensions, mm		
	Tube OD	Wall Thickness	A
66761-0075	19.05	0.89	25.40
66761-0100	25.40	1.65	47.75
66761-0150	38.10	1.65	57.15
66761-0200	50.80	1.65	76.20
66761-0250	63.50	1.65	76.20
66761-0300	76.20	1.65	82.55
66761-0400	101.60	2.11	98.55
66761-0600	152.40	2.77	127.00

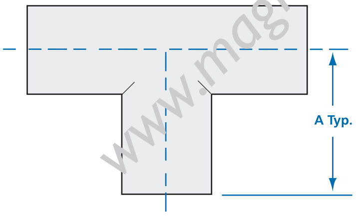


Conical Reducers

Part Number	Dimensions, (in.)		
	Tube OD	Wall Thickness	A
66762-100075	1	¾	1.38
66762-150075	1½	¾	2.38
66762-150100	1½	1	2.38
66762-200100	2	1	2.38
66762-200150	2	1½	2.38
66762-250150	2½	1½	2.38
66762-250200	2½	2	2.38
66762-300150	3	1½	3.62
66762-300200	3	2	3.62
66762-300250	3	2½	3.62
66762-400150	4	1½	3.62
66762-400200	4	2	3.62

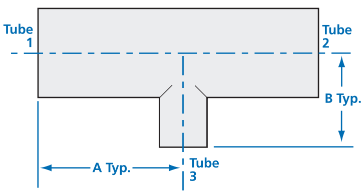


MAGNOX



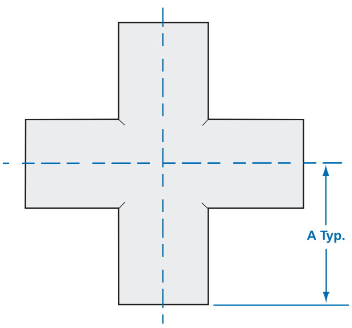
Tees

Part Number	Dimensions, mm		
	Tube OD	Wall Thickness	A
66753-0050	12.70	1.24	19.05
66753-0075	19.05	1.65	25.40
66753-0100	25.40	1.65	47.75
66753-0150	38.10	1.65	5715
66753-0200	50.80	165	76.20
66753-0250	63.50	1.65	76.20
66753-0300	76.20	1.65	95.25
66753-0400	101.60	2.11	98.40
66753-0600	152.40	2.77	127.00



Reducer Tees

Part Number	Dimensions, mm			
	Tube 1 & 2 Arm od	Tube 3 Leg od	A	B
66754-100050	25.40	12.70	47.75	25.40
66754-100075	25.40	19.05	47.75	28.45
66754-150050	38.10	12.70	57.15	31.75
66754-150075	38.10	19.05	57.15	35.05
66754-150100	38.10	25.40	57.15	54.10
66754-200050	50.80	12.70	76.20	38.10
66754-200075	50.80	19.05	76.20	41.40
66754-200100	50.80	25.40	76.20	60.45
66754-200150	50.80	38.10	76.20	63.50
66754-250150	63.50	38.10	76.20	69.85
66754-250200	63.50	50.80	76.20	82.55
66754-300150	76.20	38.10	82 55	76.20
66754-300200	76.20	50.80	82.55	88.90
66754-300250	76.20	63.50	82.55	82.55
66754-400150	101.60	38.10	98.55	88.90
66754-400200	101.60	50.80	98.55	101.60
66754-400250	101.60	63.50	98.55	95.25
66754-400300	101.60	76.20	98.55	95.25
66754-600150	152.40	38.10	127.00	114.30
66754-600200	152.40	50.80	127.00	127.00
66754-600250	152.40	63.50	127.00	120.65

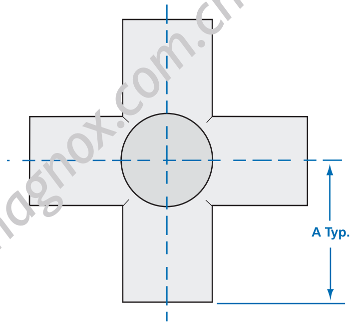


4-Way Crosses

Part Number	Dimensions, mm		
	Tube OD	Wall Thickness	A
66755-0050	12.70	1.24	19.05
66755-0075	19.05	1.65	25.40
66755-0100	25.40	1.65	47.75
66755-0150	38.10	1.65	5715
66755-0200	50.80	1.65	76.20
66755-0250	63.50	1.65	76.20
66755-0300	76.20	1.65	82.55
66755-0400	101.60	2.11	98.55
66755-0500	127.00	2.11	107.95
66755-0600	152.40	2.77	127.00
66755-0800	203.20	3.05	177.80
66755-1000	254.00	3.05	241.30

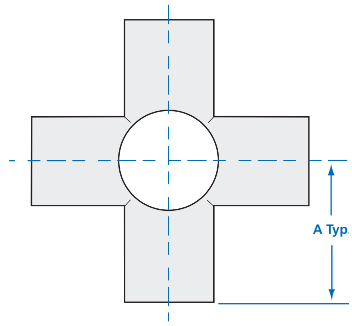
5-Way Crosses

Part Number	Dimensions, mm		
	Tube OD	Wall Thickness	A
66756-0075	19.05	1.65	25.40
66756-0100	25.40	1.65	47.75
66756-0150	38.10	1.65	57.15
66756-0200	50.80	1.65	76.20
66756-0250	63.50	1.65	76.20
66756-0300	76.20	1.65	82.55
66756-0400	101.60	2.11	98.55
66756-0500	127.00	2.11	107.95
66756-0600	152.40	2.77	127.00



6-Way Crosses

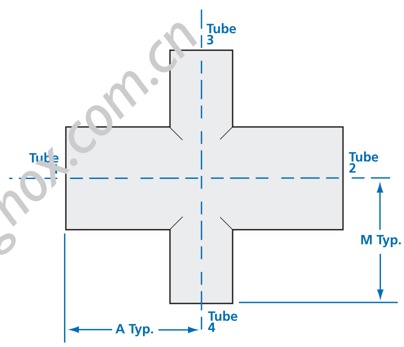
Part Number	Dimensions, mm		
	Tube OD	Wall Thickness	A
66757-0075	19.05	1.65	25.40
66757-0100	25.40	1.65	47.75
66757-0150	38.10	1.65	57.15
66757-0200	50.80	1.65	76.20
66757-0250	63.50	1.65	76.20
66757-0300	63.50	1.65	95.25
66757-0400	76.20	2.11	82.55
66757-0500	127.00	2.11	107.95
66757-0600	152.40	2.77	127.00



Reducer Crosses

Part Number	Dimensions, mm			
	Tube 1 & 2 Arm od	Tube 3 & 4 Leg od	A	B
66758-100050	25.40	12.70	47.75	25.40
66758-100075	25.40	19.05	47.75	28.45
66758-150050	38.10	12.70	57.15	31.75
66758-150075	38.10	19.05	57.15	35.05
66758-150100	38.10	25.40	57.15	54.10
66758-200050	50.80	12.70	76.20	38.10
66758-200075	50.80	19.05	76.20	41.40
66758-200100	50.80	38.10	76.20	63.50
66758-200150	63.50	38.10	76.20	69.85
66758-250150	63.50	50.80	76.20	82.55
66758-250200	76.20	38.10	82 55	76.20
66758-300150	76.20	50.80	82.55	88.90
66758-300200	76.20	63.50	82.55	82.55
66758-300250	101.60	38.10	98.55	88.90
66758-400150	101.60	50.80	98.55	101.60
66758-400200	101.60	63.50	98.55	95.25
66758-400250	101.60	76.20	98.55	95.25
66758-400300	152.40	38.10	127.00	114.30
66758-600150	152.40	50.80	127.00	127.00
66758-600200	152.40	63.50	127.00	120.65
66758-600250	152.40	76.20	127.00	120.65

Other reducer combinations can be supplied upon request



MAGNOX

Tube Ordering Information
管道订购信息

S40	—	66759	—	4	—	6	—	F4

材质

W40	SUS316L焊管
W10	SUS304焊管
S40	SUS316L无缝管
S10	SUS304 无缝管
S40V	SUS316L VAR无缝管
S40W	VIM+VAR无缝管

产品系列

66759	英制
66763-05	A制5S
66763-10	A制10S
66764	公制

尺寸

4	1/4"
6	3/8"
8	1/2"
12	3/4"
16	1"
20	1 1/4"
24	1 1/2"
32	2"
40	2 1/2"
48	3"
64	4"
80	5"
96	6"
XXXA	A制管
XXXM	公制管

长度

2	2000mm
4	4000mm
6	6000mm

表面处理

BLANK	BA Ra≤0.8um
F4	EP Ra≤0.375um
F5	MP Ra≤0.8um
F6	AP Ra≤2.50um

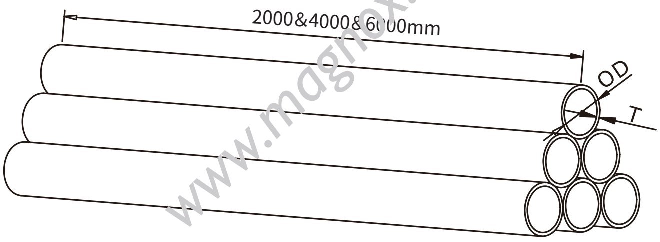
说明

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。

MAGNOX

Tube Series
英制规格管道系列

Material	316L/304
Surface treatment	EP/BA/AP
Range of size	1/8″ -12″
Comply with specification	ASTM A269.A632

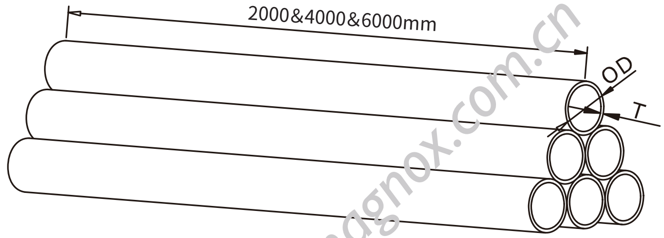


Tube size		Wall Thickness (mm)	316L/304L BA/AP 316L EP		Length
Inch size	Outside Diameter (mm)		Seamless	Seam	
1/4″	6.35	0.89/1.0	√		2000/4000/6000
3/8″	9.53	0.89/1.0	√		
1/2″	12.7	1.0/1.24	√		
5/8″	15.88	1.24	√		
3/4″	19.05	1.24/1.65	√		
1″	25.4	1.65	√	√	
1-1/2″	38.1	1.65	√	√	
2″	50.8	1.65	√	√	
2-1/2″	63.5	1.65	√	√	
3″	76.2	1.65	√	√	
4″	101.6	2.11	√	√	
5″	127	2.77	√	√	
6″	152.4	2.77	√	√	
8″	203.20	3.05	√	√	
10″	254.00	3.05	√	√	
12″	304.80	3.05	√	√	

Pipe Series

A制规格管道系列

Material	316L/304
Surface treatment	EP/BA/AP
Range of size	15A-1000A
Comply with specification	JIS G3459, JIS G3468



Pipe size		Wall Thickness (mm)		316L/304L BA/AP 316L EP		Length
A size	Outside Diameter (mm)	5S	10S	Seamless	Seam	
15A	21.7	1.65	2.1	√	√	
20A	27.2	1.65	2.1	√	√	
25A	34.0	1.65	2.8	√	√	
32A	42.7	1.65	2.8	√	√	
40A	48.6	1.65	2.8	√	√	
504	60.5	1.65	2.8	√	√	
65A	76.3	2.1	3.0		√	
80A	89.1	2.1	3.0		√	
90A	101.6	2.1	3.0		√	
100A	114.3	2.1	3.0		√	
125A	139.8	2.8	3.4		√	
150A	165.2	2.8	3.4		√	
200A	216.3	2.8	4.0		√	
250A	267.4	3.4	4.0		√	2000/4000/6000
300A	318.5	4.0	4.5		√	
350A	355.6	4.0	5.0		√	
400A	408.4	4.5	5.0		√	
450A	457.2	4.5	5.0		√	
500A	508.0	5.0	5.5		√	
550A	558.8	5.0	5.5		√	
600A	609.6	5.5	6.5		√	
650A	680.4	—	8.0		√	
700A	711.2	—	8.0		√	
750A	762.0	—	8.0		√	
800A	812.8	—	8.0		√	
850A	863.6	—	8.0		√	
900A	914.4	—	8.0		√	
950A	965.2	—	8.0		√	
1000A	1016	—	9.5		√	

4 Heater Jackets

Heater Jackets

MAGNOX

Specifications

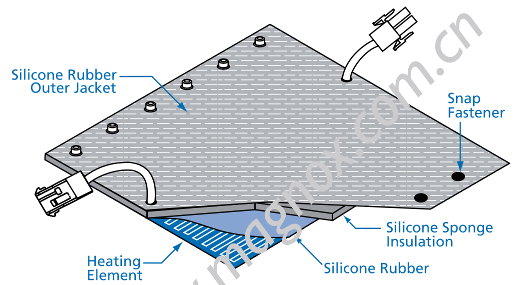
Materials

Heaterjacket: Reinforced silicone rubber fabric
Insulator: ¼ or ½ inch thick closed-cell siicone rubber foam
Fasteners: ½ inch diameter metal snaps with nylon cover standard

Electrical

Watt density: 1 to 2 inch diameter: 1.5 W/in ;
3 to 4 inch diameter: 1.25 W/in

Voltage: 120V or 208V standard,other voltages available
Power leads: 4inch long #18 AWG,UL 1180/CSA 10A rated
Connectors: Positive locking Mate-N-Lok
Temperature range:≤200°C



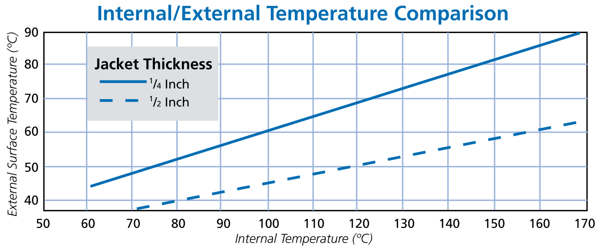
Features

- Even heating up to 200°C
- High temperature cloth heaters for heating up to 450°C
- High temperature cloth heaters for heating up to 450°C
- Heaters are interconnect able up to a 10A circuit
- Integrates with standard controllers
- Built-in insulation with insulated lead wires
- UL recognized construction
- One year warranty
- Easy on/off with reclosable fasteners
- Trimable, tight contact fit
- ¼ or ½ inch thick dosed cell silicone rubber
- ¼ to 2 inch fiberglass based insulation for cloth heaters
- 120V or 208V standard,208V available at no charge, replace "-3" with "-2" in model number, other voltages are also available

Benefits

- Reduced svstem downtime
- Improved heat transfer minimizing cold spots
- Clean room compatible
- Combine standard parts to cover custom lines
- Adjustable temperatures
- Modular heating system

Internal/External Temperature Comparison



Heater Jackets Ordering Information

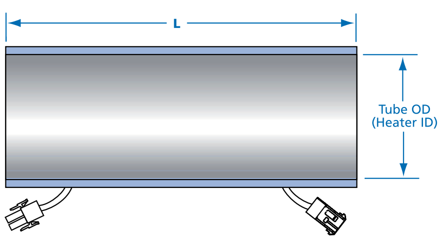
加热套订购信息

66231 — **0200 0100** — **RT**

产品系列	
66231	真空加热套

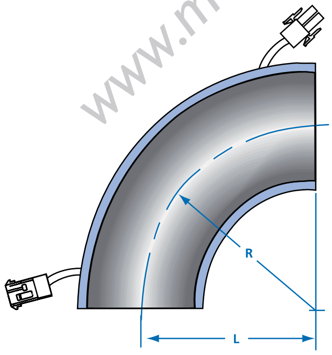
尺寸A		尺寸B	
0100	1"	0100	1"
0150	1 1/2"	0150	1 1/2"
0200	2"	0200	2"
0250	2 1/2"	0250	2 1/2"
0300	1"	0300	1"
0400	3"	0400	3"
0500	5"	0500	5"
0600	6"	0600	6"

产品类型	
TB	管道
FG	法兰
EB	90°弯头
HEB	45°弯头
ET	等径三通
RT	变径三通
RC	锥形变径

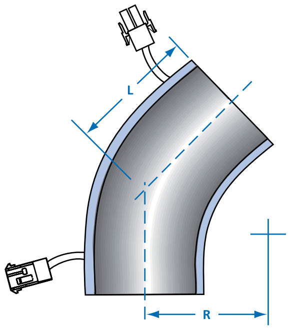


1/2" Thick Heater Jackets - Tube OD

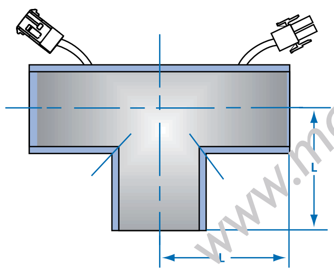
Flange Size	Length
1.5"(38.1)	OPTION
2"(50.8)	OPTION
2.5"(63.2)	OPTION
3"(76.2)	OPTION
4"(101.6)	OPTION



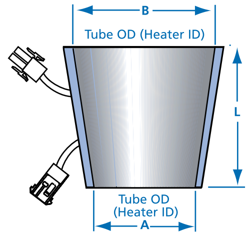
90°Radius Elbow		
Tube OD	**Langth L**	**Radius R**
1½	2.00	2.25
2	2.75	3.00
3	4.00	4.50
4	5.50	6.00



45°Radius Elbow		
Tube OD	**Langth L**	**Radius R**
1½	0.69	2.25
2	1.00	3.00
3	1.37	4.50
4	2.00	6.00

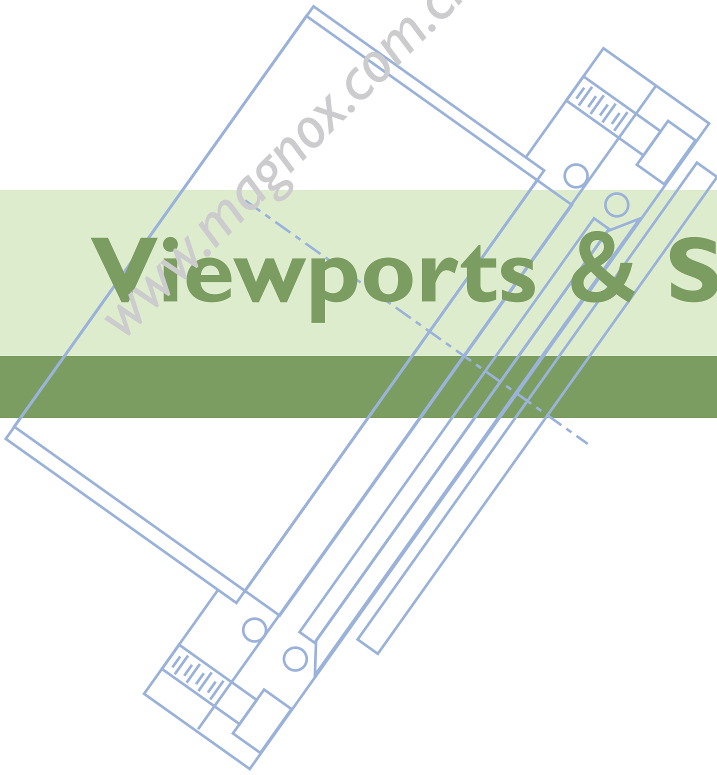


Tee Heater Jackets		
Flange Type	**Tube OD**	**Length L**
NW-25	1½	2
NW-40	2	2¾
NW-50	3	3
ISO-80	3	3
ISO-100	3	3



Conical Heater Jackets			
Thickness	**A**	**B**	**Langth L**
¼	1½	2	1 ⅜
¼	2	3	2 7/16
¼	2	4	2 ⅝
¼	3	4	2 ⅝

5 Viewports & Shutters



General Information

MAGNOX Products offers a complete line of viewports for vacuum chambers with NW,ISO and CF langes. CF flanged viewports are available with fully annealed 7056 glass or fused silica Weld stub viewports are available for welding onto new or existing chamers.Specal materials and coatings, such as sapphire and anti-reflective (AR)coating, are available on request Glass provides a large distortion free viewing area at low cost. Quartz and fused silica provide superior ultraviolet radiation transmission and resistance to thermal shock.

MAGNOX manufactures glass adapters in 7740 Pyrex and 7052 glass. These adapters are useful for mounting glass accessories to metal high vacuum systems, or to attach flange mounted components to glass systems, Glass adapters are available with NW. CF. and ISO flanges as standards.

Zero Length Viewport Ordering Information

零长度视窗订购信息

66252 — **0275** — **FQ**

产品系列	
66249	KF法兰
66252	CF法兰
66253	ISO法兰

代码	规格说明
0133	CF16
0075	KF16
0212	CF25
0100	KF25
0275	CF35
0150	KF40
0338	CF50
0200	KF50
0450	CF63
0250K	ISO63-K
0462	CF80
0300K	ISO80-K
0600	CF100
0400K	ISO100-K
0600K	ISO160-K
0800	CF160

产品类型	
KG	K9光学玻璃
FQ	石英
FS	蓝宝石
CQ	晶体石英
MF	氟化镁
US	紫外蓝宝石
ZS	硒化锌

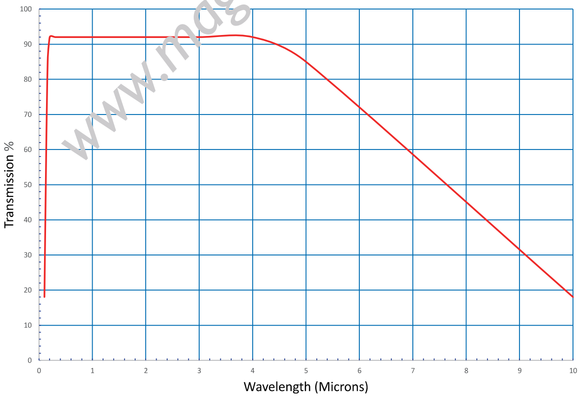
说明

1. 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。

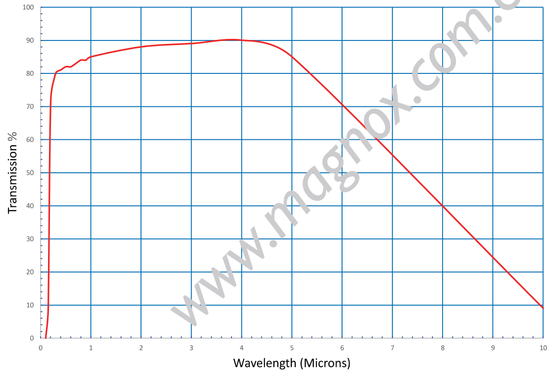
Viewports

MAGNOX

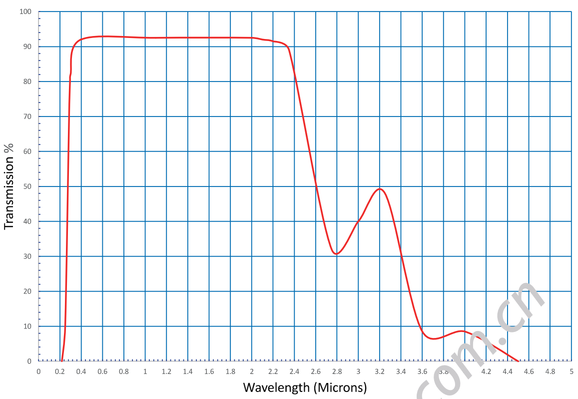
Magnesium Fluoride Transmission Spectrum



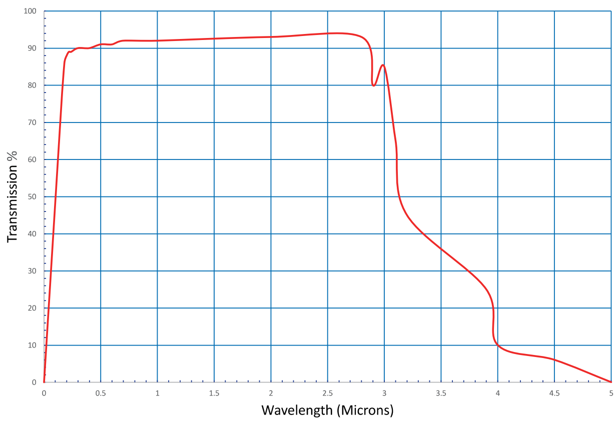
DUV Sapphire Transmission Spectrum



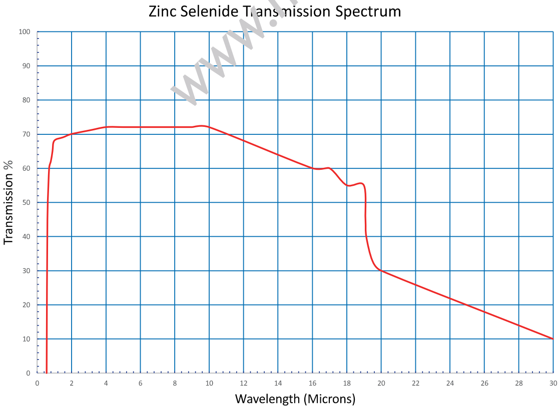
Kodial Transmission Spectrum



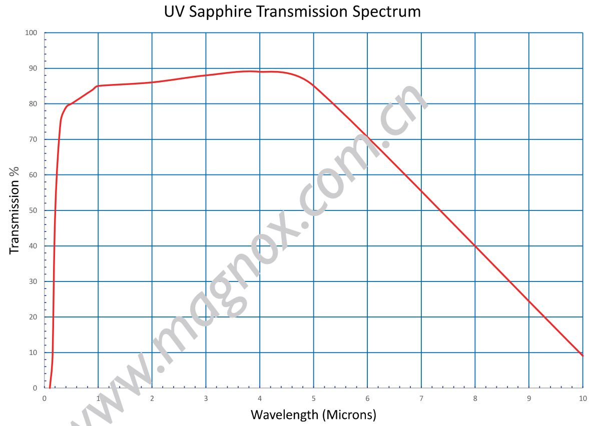
Crystal Quartz Transmission Spectrum



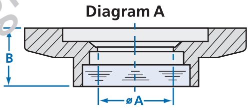
Zinc Selenide Transmission Spectrum

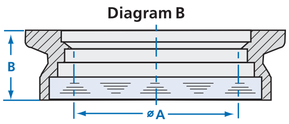


UV Sapphire Transmission Spectrum



MAGNOX

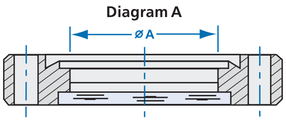


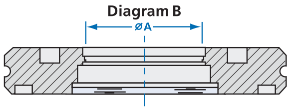


NW Viewports

Part Number	Diagram	Flange Size	Dimensions, mm	
			View Ø A	B
66249-0075	A	NW-16	15.75	9.78
66249-0100	A	NW-25	15.75	9.78
66249-0150	B	NW-40	38.35	14.07
66249-0200	B	NW-50	38.35	14.07

注：因工艺所致，不同材质的视镜尺寸会有差异，具体数据请咨询迈格诺科销售工程师。





ISO&CF Zero Length Viewports

Part Number	Diagram	Flange Type	Dimensions, mm
			View Ø A
66252-0133	A	1.33CF	16.00
66252-0212	A	2.12CF	16.00
66252-0275	A	2.75CF	37.85
66252-0338	A	3.38CF	37.85
66252-0450	A	4.50CF	67.56
66252-0462	A	4.62CF	67.56
66252-0600	A	6.00CF	100.84
66252-0675	A	6.75CF	100.84
66252-0800	A	8.00CF	142.24
66252-1000	A	10.00CF	142.24
66253-0250	B	ISO-63	37.85
66253-0300	B	ISO-80	37.85
66253-0400	B	ISO-100	67.56
66253-0600	B	ISO-160	100.84
66253-0800	B	ISO-200	142.24

注：因工艺所致，不同材质的视镜尺寸会有差异，具体数据请咨询迈格诺科销售工程师。

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Demountable Viewport Ordering Information

可拆卸视窗订购信息

66257	—	0275	—	FQ

型号

66250	KF法兰
66251	KF法兰套装
66254	ISO法兰
66257	CF法兰

尺寸规格

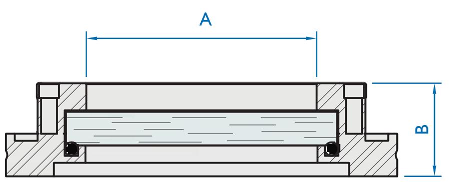
0133	CF16
0075	KF16
0212	CF25
0100	KF25
0275	CF35
0150	KF40
0338	CF50
0200	KF50
0250K	ISO63-K
0250F	ISO63-F
0250N	ISO63-NW
0462	CF80
0300K	ISO80-K
0300F	ISO80-F
0300N	ISO80-NW
0600	CF100
0400K	ISO100-K
0400F	ISO100-F
0400N	ISO100-NW
0675	CF130
0600K	ISO160-K
0600F	IS0160-F
0600N	ISO160-NW
0800	CF160
0800K	ISO200-K
0800F	ISO200-F
0800N	ISO200-NW
1000	CF200
1000K	I$0250-K
1000F	ISO250-F
1000N	ISO250-NW

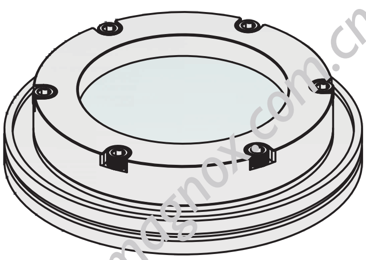
视镜材质

FQ	石英
FS	蓝宝石
UQ1	紫外石英增透膜245-400nm
UQ2	紫外石英增透膜350-700nm
UQ3	紫外石英增透膜650-1050nm
UQ4	紫外石英增透膜1050-1700nm

说明

1、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。

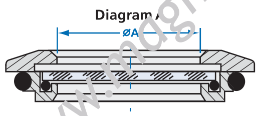


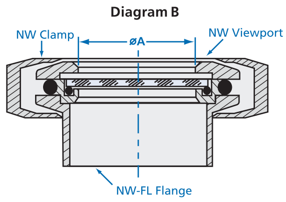


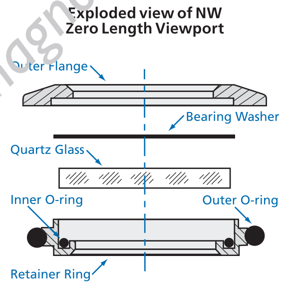
ISO-K Flange Demountable Viewports

Model Number	Flange SIze	Dimensions, mm	
		A	B
66254-0250	ISO63	60.2	73.15
66254-0400	ISO80	97.28	73.15
66254-0600	ISO100	148.08	73.15

MAGNOX







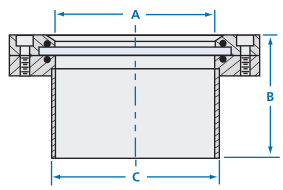
NW Zero Length Viewports

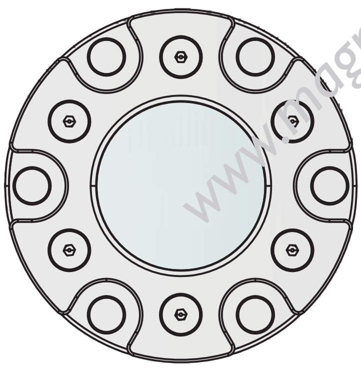
Model Number	Dimensions, mm			
	Diagram	Flange Type	View Materials	View Ø A
66250-0150	A	NW-40	Fused quartz	32.00
66250-0200	A	NW-50	Fused quartz	41.40
66251-0150	B	NW-40	Fused quartz	32.00
66251-0200	B	NW-50	Fused quartz	41.40

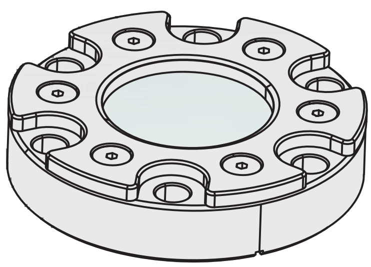
Weld stub viewports are provided with a tube for welding onto an existing chamber.

Viewport Weld Stubs

Part Number	Flange OD	Dimensions, mm		
		View Ø A	B	C
66254-0250	113.54	60.2	73.15	63.50
66254-0400	151.64	97.28	73.15	101.60
66254-0600	202.44	148.08	73.15	152.40







CF Zero Length Viewports

Part Number	Flange Size	Dimensions, mm	
		View Diameter	Galass Thickness
66257-0133	CF1.33	14.22	4.00
66257-0275	CF2.75	30.23	4.00

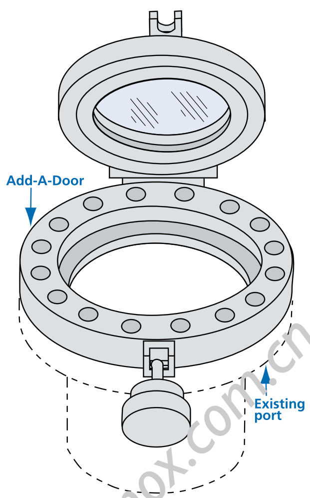
MAGNOX

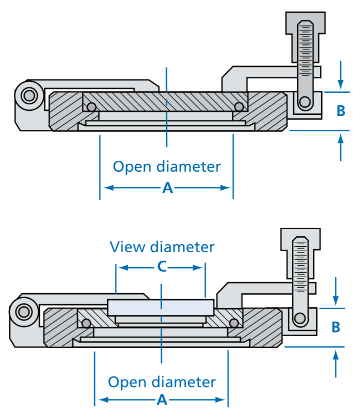
Vacuum Quick Access Dorrs
真空快开门

An Add-A-Door can provide easy access to a vacuum system when elastomer seals are acceptable. The hinged, FKM sealed door is quickly bolted to an existing CF (Conflat style) flanged chamber port. The door is opened easily by turning a knurled knob. These doors are available for 2¾ to 10 inch (70 to 254mm) OD flanges with a solid metal door or with a iewport. The standard finish is electropolish. Custom sizes can be supplied upon request.

Technical Data for Quick Access Doors

Door Seal	FKM
Mounting Seal	CF16 gasket
Operate Pressure Range	1.000 mbar-1.33x10-8 mbar
Leak Rate	1.33x10-9 mbar Vs, He
Temperature Range	-20°C (-4°F) ~ 150°C (302°F)
Bake Temperature	100°C (212°F)
Body Material	SS304L
Hinge Material	Optional high - grade SS316L material
Viewport Material	Glass (only with viewport version)
Mounting Position	Any





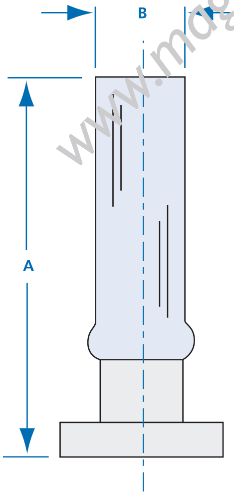
Quick Access Dorrs With Blank Flanges

Part Number	Dimensions, mm		
	Flange Type	A	B
66255-0275	2.75CF	35.05	12.70
66255-0450	4.50CF	61.85	17.45
66255-0600	6.00CF	99.49	19.84
66255-0800	8.00CF	149.23	22.23
66255-1000	10.00CF	200.03	24.59

Quick Access Dorrs With CF Flanges

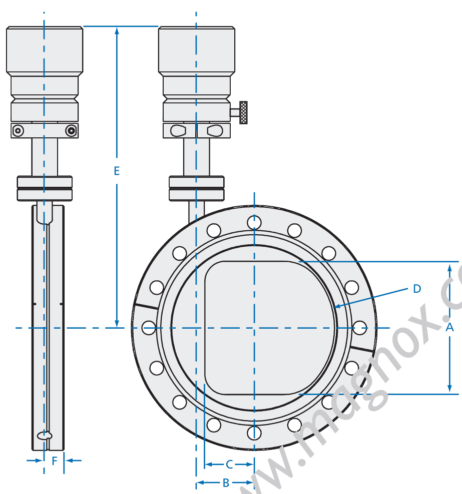
Part Number	Dimensions, mm			
	Flange Type	A	B	C
66256-0450	4.50CF	61.85	17.45	37.85
66256-0600	6.00CF	99.49	25.40	67.31
66256-0800	8.00CF	149.23	30.48	98.55
66256-1000	10.00CF	200.03	33.02	142.24

MAGNOX



NW, ISO & CF Glass Adapters

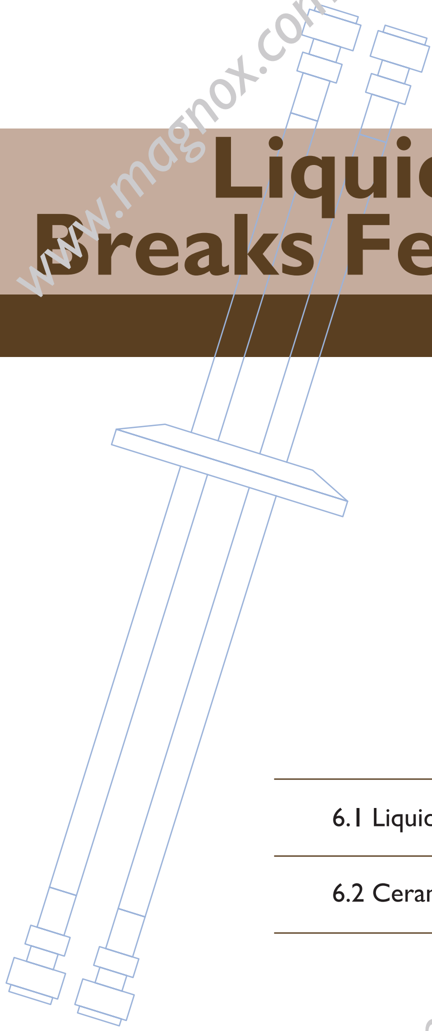
Part Number	Dimensions, mm	
	Flange Size	A
66246-0050	NW-10	124.46
66246-0075	NW-16	124.46
66246-0100	NW-25	124.46
66246-0150	NW-40	124.46
66246-0200	NW-50	137.16
66246-0250K	ISO-63	139.70
66246-0300K	ISO-80	165.10
66246-0400K	ISO-100	260.35
66246-0600K	ISO-160	276.35
66246-0133	1.33CF	137.92
66246-0212	2.12CF	137.67
66246-0275	2.75CF	138.68
66246-0338	3.38CF	151.89
66246-0450	4.50CF	19710
66246-0462	4.62CF	194.56
66246-0600	6.00CF	265.18
66246-0675	6.75CF	278.38
66246-0800	8.00CF	279.40



Viewport Stubs

Part Number	Flange Size	Dimensions, mm					
		A	B	C	D	E	F
66248-0275	2.75CF	28.45	14.48	10.67	17.78	152.15	11.18
66248-0450	4.50CF	50.80	21.59	16.51	29.97	175.77	8.64
66248-0400	6.00CF	82.55	35.56	30.48	48.26	186.44	11.94
66248-0600	8.00CF	127.00	52.32	44.45	73.66	215.65	12.70

6 Liquid & Ceramic Breaks Feedthroughs



Liquid & Ceramic Breaks Feedthroughs

MAGNOX Products' line of liquid and liquid nitrogen feedthroughs includes the most commonly required for medium, high and ultra-high vacuum applications. Tubing is .25 and .375 (6.35 and 9.53mm) inch OD, 304 stainless steel with CF or NW flanges. They are available without fittings or terminated with industry standard Swagelok or Cajon VCR fittings. Maximum bakeout with CF flanges is 450°C and 200°C with NWs. Vacuum ranges are 10^{-10} mbar and 10^{-8} respectively.

Liquid feedthroughs are a cost-effective and reliable way to introduce water into a vacuum system. The .035 inch (.89mm) single wall tube construction is designed for the transport of water as a cooling agent. Liquid nitrogen feedthroughs are constructed with single and dual coaxial tube geometries. This thermal barrier effectively reduces condensation and ice buildup on the atmosphere side of the feedthrough around the mounting flange interface, protecting the seal's integrity. This is necessary because of the extreme thermal gradients encountered with liquid nitrogen.

Liquid Feedthroughs Ordering Information

气液接头订购信息

66801	–	0275	–	LN	–	D	–	VM	SW	–	10
型号		尺寸规格		安装类型		馈通管数量		真空侧端口	大气测端口		材质

型号

66801	气液接头

尺寸规格

0133	CF16
0075	KF16
0212	CF25
0100	KF25
0275	CF35
0150	KF40

安装类型

LF	法兰
LN	液氟

馈通管数量

S	1
D	2

真空侧端口

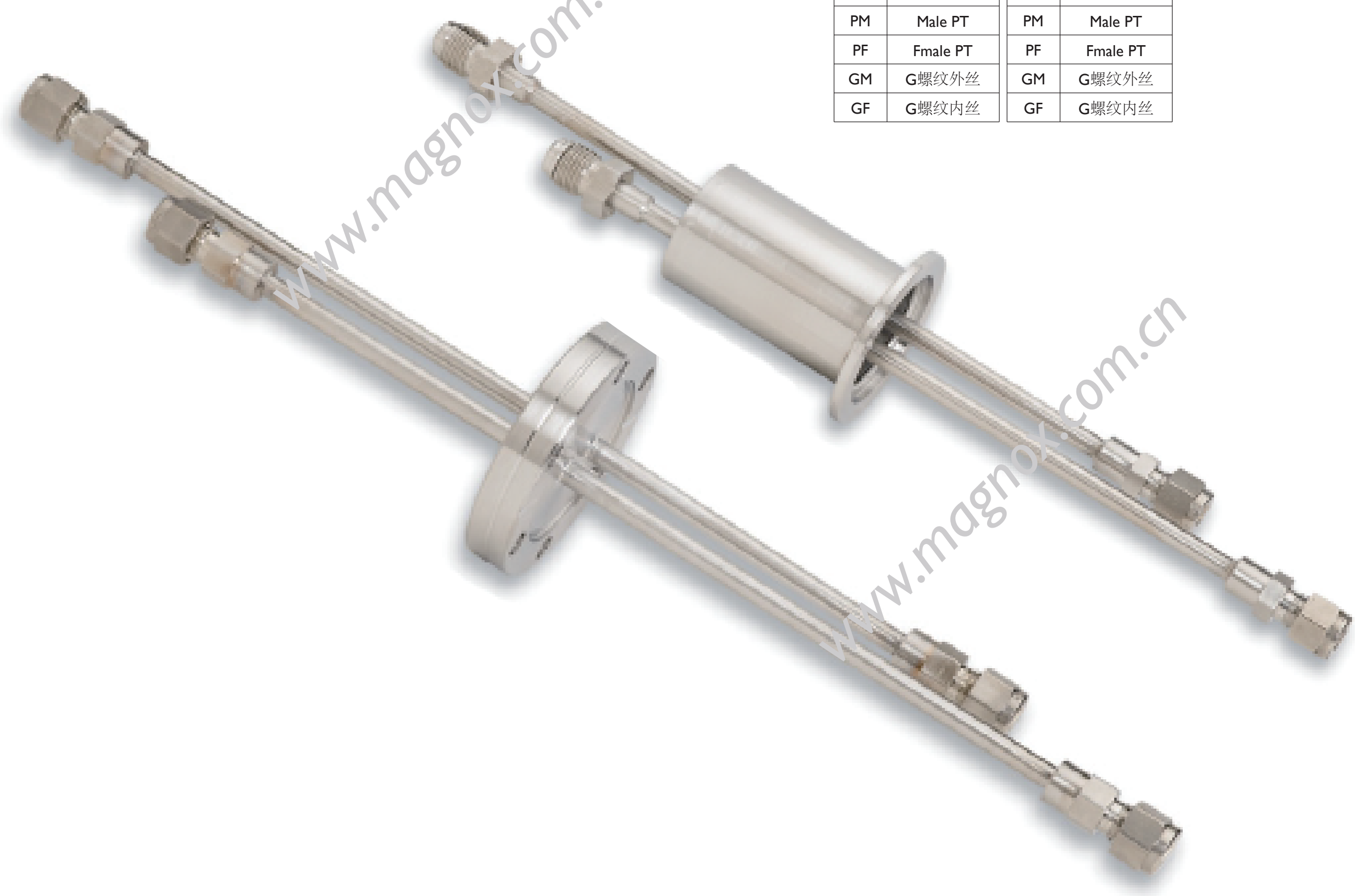
TW	TUBE
SW	LOK
VM	Male VCR
VF	Fmale VCR
OF	Fmale VCO
OM	Male VCO
QF	Quick Fittings
NM	Male NPT
NF	Fmale NPT
PM	Male PT
PF	Fmale PT
GM	G螺纹外丝
GF	G螺纹内丝

大气测端口

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

材质

10	SUS304
40	SUS316L

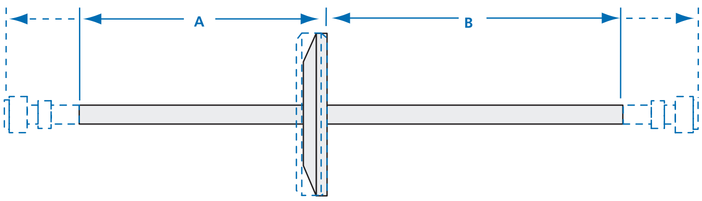


Liquid & Ceramic Breaks Feedthroughs

MAGNOX

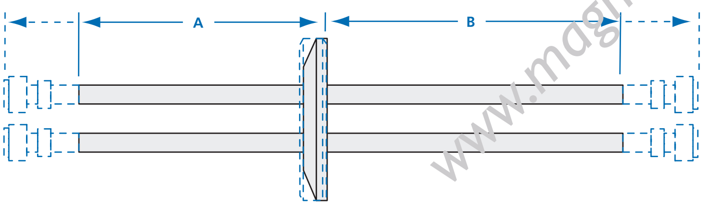
Single Liquid Feedthroughs

Flange Size	Tube Fittings	Tube OD	Dimensions, mm	
			A	B
NW-16	None	6.35	76.20	101.60
NW-25	None	6.35	76.20	101.60
NW-25	2 Swagelok	6.35	101.85	127.25
NW-25	2 MVCR	6.35	102.36	127.76
NW-40	None	6.35	76.20	101.60
NW-40	2 Swagelok	6.35	101.85	127.25
NW-40	2 MVCR	6.35	102.35	127.76
NW-40	None	9.53	76.20	101.60
NW-50	None	6.35	76.20	101.60
NW-50	2 Swagelok	6.35	101.85	127.25
NW-50	2 MVCR	6.35	102.36	127.76
NW-50	None	9.53	76.20	101.60
1.33CF	None	6.35	76.20	101.60
2.75CF	None	9.53	76.20	101.60
2.75CF	None	6.35	76.20	101.60
2.75CF	2 Swagelok	6.35	101.85	127.25
2.75CF	2MVCR	6.35	102.36	127.76
2.75CF	None	9.53	76.20	101.60



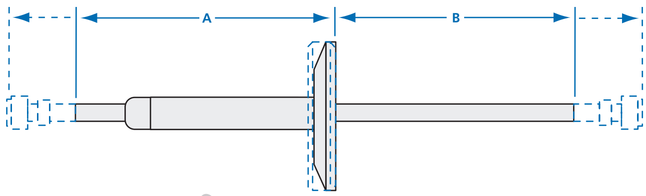
Dual Liquid Feedthroughs

Flange Size	Tube Fittings	Tube OD	Dimensions, mm	
			A	B
NW-40	None	6.35	76.20	101.60
NW-40	4 Swagelok	6.35	101.85	127.25
NW-40	4 MVCR	6.35	102.36	127.76
NW-50	None	6.35	76.20	101.60
NW-50	4 Swagelok	6.35	101.85	127.25
NW-50	4 MVCR	6.35	102.35	127.76
2.75CF	None	6.35	76.20	101.60
2.75CF	4 Swagelok	6.35	101.85	127.25
2.75CF	4 MVCR	6.35	102.36	127.76
2.75CF	None	9.53	76.20	101.60



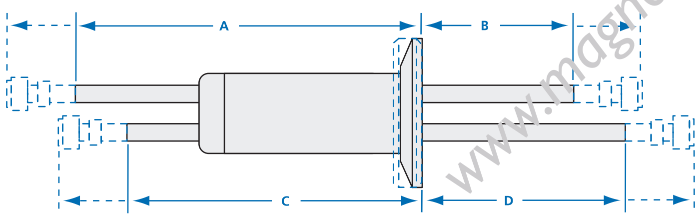
Single Liquid Nitrogen Feedthroughs

Flange Size	Tube Fittings	Tube OD	Dimensions, mm	
			A	B
NW-16	None	6.35	139.70	114.30
NW-25	None	6.35	133.70	114.30
NW-25	2 Swagelok	6.35	165.35	139.95
NW-25	2 MVCR	6.35	165.86	140.46
NW-40	None	6.35	139.70	114.20
NW-40	2 Swagelok	6.35	165.35	139.95
NW-40	2 MVCR	6.35	165.86	140.46
NW-40	None	9.53	139.70	114.30
NW-50	None	6.35	133.70	114.30
NW-50	2 Swagelok	6.35	105.35	139.95
NW-50	2 MVCR	6.35	165.86	140.46
NW-50	None	9.53	139.70	114.30
1.33CF	None	6.35	139.70	114.30
2.75CF	None	9.53	133.70	114.30
2.75CF	None	6.35	139.70	114.30
2.75CF	2 Swagelok	6.35	165.35	139.95
2.75CF	2MVCR	6.35	165.86	140.46
2.75CF	None	9.53	139.70	114.30



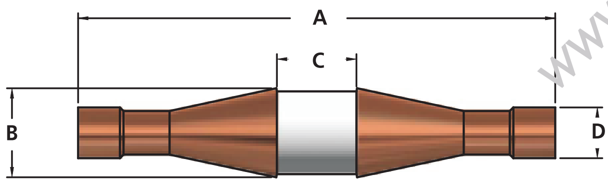
Dual Liquid Nitrogen Feedthroughs

Flange Size	Tube Fittings	Tube OD	Dimensions, mm			
			A	B	C	D
NW-40	None	6.35	165.10	88.90	139.70	114.30
NW-40	4 Swagelok	6.35	190.75	114.55	165.35	139.95
NW-40	4 MVCR	6.35	191.26	115.06	165.86	140.46
NW-50	None	6.35	165.10	88.90	139.70	114.30
NW-50	4 Swagelok	6.35	190.75	114.55	165.35	139.95
NW-50	4 MVCR	6.35	191.26	115.06	165.86	140.46
2.75CF	None	6.35	165.10	88.90	139.70	114.30
2.75CF	4 Swagelok	6.35	190.75	114.55	165.35	139.95
2.75CF	4 MVCR	6.35	191.26	115.06	165.86	140.46
2.75CF	None	9.53	165.10	88.90	139.70	114.30



Ceramic Breaks-Water

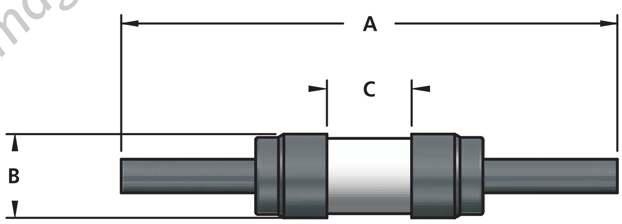
Insulate electrical lines in applications with non-cryogenic coolant lines
Designed for high vacuum and UHV applications
Constructed with vacuum-grade materials, including OFHC® copper weldable lips, high-purity alumina ceramic insulation, and vacuum tube-grade braze alloys
OFHC copper weldable lips can be welded or brazed to copper or stainless steel cooling lines
Available in 1/4", 3/8", and 1/2" tube sizes



Part Number	Braze Lip Material	Voltage	Tube Socket (in.)	Dimensions, (in.)			
				A	B	C	D
66903-0321CFT05W	Copper	5kV	1/4	3	0.59	0.50	0.32
66903-0441CFT05W	Copper	5kV	3/8	3	0.59	0.50	0.44
66903-0591CFT05W	Copper	5kV	1/2	3	0.74	0.50	0.59

Ceramic Breaks-Cryogenic

Provide electrical insulation in applications with liquid nitrogen
Rated for high vacuum and UHV applications
Constructed with vacuum-grade materials, including 304 stainless steel weldable lips, high-purity alumina ceramic insulation and vacuum tube-grade braze alloys
A flexible seal design and the use of an expansion alloy that has a low thermal coeficient of expansion enables for operation at cryogenic temperatures to -200° C
Available in 1/8", 1/4", and 3/8" tube sizes

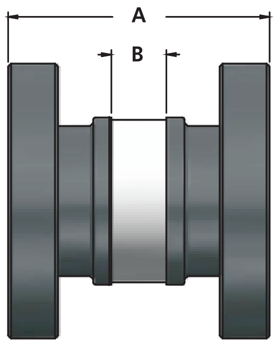


Part Number	Voltage	Weld Lip Material	Ends	Dimensions, (in.)		
				A	B	C
66904-0121CFT03C	3kV	Stainless Steel	1/" Tube End.	1.80	0.312	0.30
66904-0251CFT06C	6kV	Stainless Steel	1/4" Tube End	3.00	0.54	0.67
66904-0311CFT06C	6kV	Stainless Steel	1/4" Socket Weld	3.00	0.54	0.67
66904-0371CFT06C	6kV	Stainless Steel	3/8" Tube End	3.00	0.79	0.67
66904-0251CFT13C	13kV	Stainless Steel	1/4" Tube End	3.00	0.57	0.67
66904-0441CFT13C	13kV	Stainless Steel	3/8" Socket Weld	3.00	0.79	0.52

Ceramic Breaks Vacuum

Designed and rated for high vacuum and UHV applications.
Constructed of vacuum-grade materials, inculuding high-purity alumina ceramic insulation, 304 stainless steel or low-expansion Kovar® weldable lips, and vacuum tube-grade braze alloys.
Available in tube sizes ranging from ½" to 8" nominal diameters.
Larger-diameter assemblies have tapered seals to minimize stress caused by differential expansion during thermal cycling.

CF Flanged



Part Number	Termination	Voltage	Weldable Material	Dimensions, (in.)	
				A	B
66902-1503CFT03V	1.33"CF	3kV	Stainless Steel	2.65	0.25
66902-0512CFT10V	1.33"CF	10kV	Stainless Steel	1.84	0.75
66902-0752CFT10V	1.33"CF	10kV	Stainless Steel	3.62	1.00
66902-7836CCFT15V	10"CF	15kV	Kovar	5.75	1.50
66902-1253CFT05V	2.75"CF	5kV	Stainless Steel	2.30	0.16
66902-1503CFT15V	2.75"CF	15kV	Stainless Steel	4.20	2.00
66902-1203CFT20V	2.75"CF	20kV	Stainless Steel	3.00	1.50
66902-1253CFT35V	2.75"CF	35kV	Kovar	4.20	2.00
66902-1253CFT65V	2.75"CF	65kV	Kovar	6.10	3.90
66902-2376CFT08V	4.5"CF	8kV	Kovar	4.50	0.75
66902-2386CFT40V	4.5"CF	40kV	Kovar	4.20	2.00
66902-3816AFT08V	6"CF	8kV	Kovar	4.62	0.75
66902-4006ACFT20V	6"CF	20kV	Kovar	4.60	0.90
66902-2806ACFT60V	6"CF	60kV	Kovar	5.20	3.00
66902-6016BCFT30V	6"CF	30kV	Kovar	5.50	1.50

Electrical &Instrumentation Feedthroughs

7

Electrical Feedthroughs

MAGNOX Products' extensive line of electrical feedthroughs are manufactured from ultra-high vacuum grade materials such as high alumina ceramic insulators, OFHC copper or nickel conductors, and 304 stainless steel flanges. These robust ceramic to metal feedthroughs have electrical ratings for operation with one side in dry atmosphere while the opposite end is in a stable vacuum. They are used in UHV systems with CF flanges or high vacuum systems with NW flanges. CF feedthroughs can be baked to 450°C and NW to 200°C.

Our product line consists of the most commonly required feedthroughs for general vacuum applications. Customs designs or modified standards can readily be supplied.

Electrical Feedthroughs Ordering Information

电极馈通订购信息

66906 – 0212 – P – 4 – 02 – NI – 15 – 0005

型号	
66906	真空电极系列

尺寸规格	
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	ISO63-NW
0462	CF80
0300K	ISO80-K
0300F	ISO80-F
0300N	ISO80-NW
0600	CF100
0400K	ISO100-K
0400F	ISO100-F
0400N	ISO100-NW
0675	CF130
0600K	ISO160-K
0600F	ISO160-F
0600N	ISO160-NW
0800	CF160
0800K	ISO200-K
0800F	ISO200-F
0800N	ISO200-NW
1000	CF200
1000K	ISO250-K
1000F	ISO250-F
1000N	ISO250-NW
1200	CF250
1200K	ISO320-K
1200F	ISO320-F
1200N	ISO320-NW

电极形式	
P	Pink
T	Tube

电极规格	
2	1/8"
4	1/4"
6	3/8"
8	1/2"
12	3/4"
16	1"
XXM	公制管
MXX	公制螺牙

电极数量
01
02
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
20

电极材质	
NI	镍
KA	4J33
RC	红铜

单芯电流（A）
5
10
12
14
15
20
30
50
80
160
200
350
500
800
1000

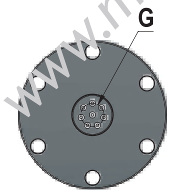
单芯电压（K V）	
0005	0.5
0010	1
0015	1.5
0020	2
0025	3
0030	5
0050	10
0100	12
0200	20

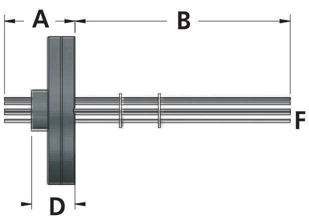
说明

1、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。

MAGNOX

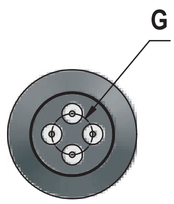
CF Flange Voltage: 1,000 Amperage: 1; 7;20

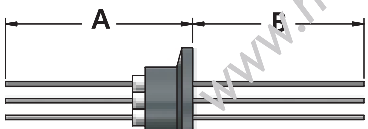




Flange Size	Pins or Tubes	#of Pins or Tubes	Conductor Material	Amps Per Pin/Tube	Dimensions, (in.)				
					A	B	D	F	G
1.33" CF	Pin	1	Stainless Steel	1	1.80	2.20	0.80	0.05	N/A
1.33" CF	Pin	1	Copper	20	1.80	2.20	0.80	0.05	N/A
2.75" CF	Pin	1	Copper	20	1.80	2.20	0.80	0.05	N/A
1.33" CF	Pin	2	Nicke	7	2.60	1.40	1.20	0.05	0.31
2.75" CF	Pin	2	Nicke	7	2.10	1.90	0.70	0.05	0.31
1.33" CF	Pin	2	Stainless Steel	1	2.60	1.40	1.20	0.05	0.31
2.75" CF	Pin	2	Stainless Steel	1	2.10	1.90	0.70	0.05	0.31
1.33" CF	Pin	2	Copper	20	2.63	1.40	1.20	0.05	0.31
2.75" CF	Pin	2	Copper	20	2.10	1.90	0.70	0.05	0.31
1.33" CF	Pin	4	Nicke	7	2.63	1.27	1.17	0.05	0.38
2.75" CF	Pin	4	Nicke	7	2.13	1.87	0.67	0.05	0.38
1.33" CF	Pin	4	Stainless Steel	1	2.63	1.27	1.17	0.05	0.38
2.75" CF	Pin	4	Stainless Steel	1	2.13	1.87	0.67	0.05	0.38
1.33" CF	Pin	4	Copper	20	2.63	1.27	1.17	0.05	0.38
2.75" CF	Pin	4	Copper	20	2.13	1.87	0.67	0.05	0.38
1.33" CF	Pin	8	Kovar	7	2.63	1.37	1.17	0.05	0.43
2.75" CF	Pin	8	Kovar	7	2.13	1.87	0.67	0.05	0.43

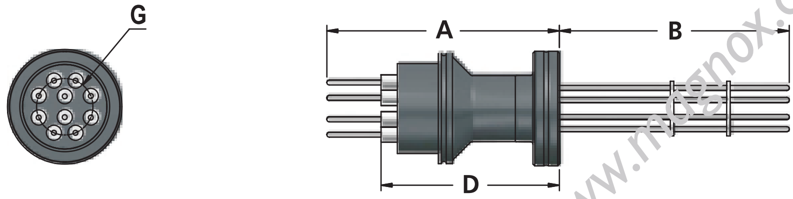
KF(QF) Flange Voltage: 1,000 Amperage: 1; 7;20





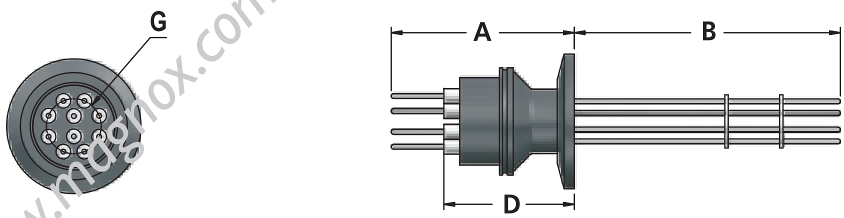
Flange Size	Pins or Tubes	#of Pins or Tubes	Conductor Material	Amps Per Pin/Tube	Dimensions, (in.)		
					A	B	G
KF25	Pin	1	Nicke	7	1.80	2.20	N/W
KF16	Pin	1	Copper	20	1.80	2.20	N/W
KF16	Pin	2	Nicke	7	2.10	1.90	0.31
KF40	Pin	2	Nicke	7	2.10	1.90	0.31
KF16	Pin	2	Stainless Steel	1	2.10	1.90	0.31
KF40	Pin	2	Stainless Steel	1	2.10	1.90	0.31
KF16	Pin	2	Copper	20	2.10	1.90	0.31
KF25	Pin	2	Copper	20	2.10	1.90	0.31
KF40	Pin	2	Copper	20	2.10	1.90	0.31
KF16	Pin	4	Nicke	7	2.13	1.87	0.38
KF25	Pin	4	Nicke	7	2.13	1.87	0.38
KF40	Pin	4	Nicke	7	2.13	1.87	0.38
KF16	Pin	4	Stainless Steel	1	2.13	1.87	0.38
KF25	Pin	4	Stainless Steel	1	2.13	1.87	0.38
KF40	Pin	4	Stainless Steel	1	2.13	1.87	0.38
KF16	Pin	4	Copper	20	2.13	1.87	0.38
KF25	Pin	4	Copper	20	2.13	1.87	0.38
KF40	Pin	4	Copper	20	2.13	1.87	0.38
KF50	Pin	4	Copper	20	2.13	1.87	0.38
KF16	Pin	8	Kovar®	7	2.13	1.87	0.43
KF25	Pin	8	Kovar	7	2.13	1.87	0.43
KF40	Pin	8	Kovar	7	2.13	1.87	0.43

CF Flange   Voltage: 2,000   Amperage: 10



Flange Size	# of Pins	Conductor Material	Amps/Pin	Dimensions, (in.)			
				A	B	D	G
1.33" CF	4	Alumel	10	2.30	2.70	1.81	0.38
2.75" CF	4	Alumel	10	1.80	3.20	1.31	0.38
1.33" CF	6	Alumel	10	2.30	2.70	1.81	0.44
2.75" CF	6	Alumel	10	1.80	3.20	1.31	0.44
1.33" CF	10	Alumel	10	2.55	2.70	1.93	0.51
2.75" CF	10	Alumel	10	2.05	3.20	1.43	0.51

KF Flange   Voltage: 2,000   Amperage: 10



Flange Size	# of Pins	Material	Amps/Pin	Dimensions, (in.)			
				A	B	D	G
KF16	4	Alumel®	10	2.30	2.70	1.31	0.38
KF40	4	Alumel	10	1.80	3.20	1.31	0.38
KF16	6	Alumel	10	2.30	2.70	1.31	0.44
KF25	6	Alumel	10	1.80	3.20	1.31	0.44
KF40	6	Alumel	10	2.55	2.70	1.31	0.44
KF16	10	Alumel	10	2.05	3.20	1.43	0.51
KF25	10	Alumel	10	2.05	3.20	1.43	0.51
KF40	10	Alumel	10	2.05	3.20	1.43	0.51

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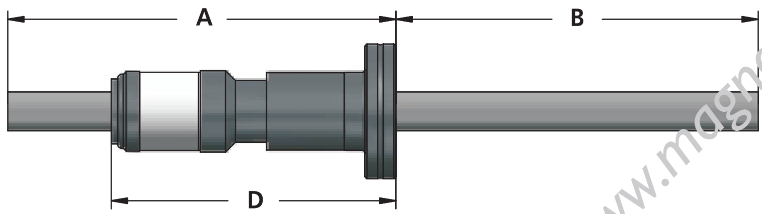
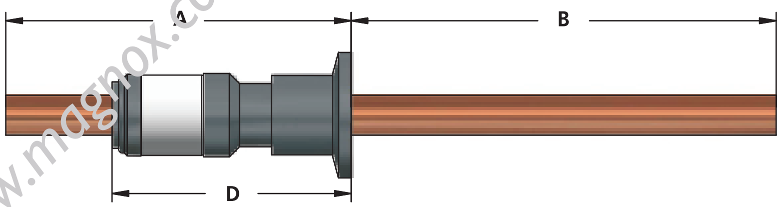
CF Flange Voltage: 3,000 Amperage: 125; 250; 600



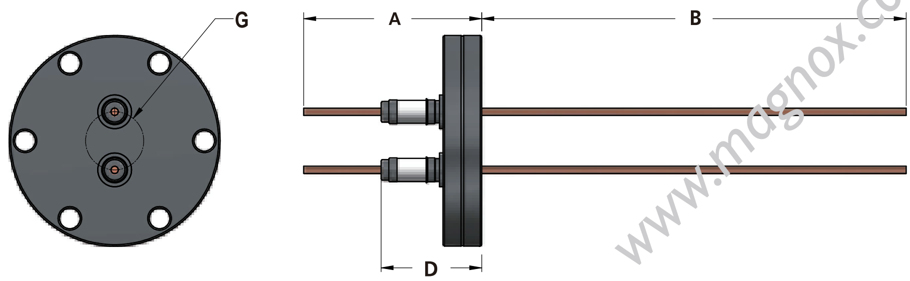
Flange Size	Pins or Tubes	# of Pins or Tubes	Conductor Material	Amps Per Pin/Tube	Dimensions, (in.)		
					A	B	D
1.33" CF	Pin	1	Nickel	125	3.60	3.70	2.60
1.33" CF	Pin	1	Copper	250	3.65	3.60	2.65
1.33" CF	Tube	1	Copper	250	3.65	3.60	2.65
2.75" CF	Pin	1	Copper	250	3.15	4.10	2.15
2.75" CF	Tube	1	Copper	250	3.15	4.10	2.15
2.75" CF	Pin	1	Copper	600	3.85	3.40	2.85
2.75" CF	Tube	1	Copper	600	3.80	4.10	2.80
2.75" CF	Pin	2	Copper	250	2.90	4.40	1.90

KF Flange Voltage: 3,000 Amperage: 250; 600



Flange Size	Pins or Tubes	# of Pins or Tubes	Conductor Material	Amps Per Pin/Tube	Dimensions, (in.)		
					A	B	D
KF16	Pin	1	Nickel	250	3.15	4.10	2.15
KF16	Pin	1	Copper	250	3.15	4.10	2.15
KF25	Tube	1	Copper	250	3.15	4.10	2.15
KF40	Pin	1	Copper	250	3.15	4.10	2.15
KF40	Tube	1	Copper	250	3.15	4.10	2.15
KF40	Pin	1	Copper	600	3.85	3.40	2.85
KF40	Tube	1	Copper	600	3.80	4.10	2.80
KF50	Pin	1	Copper	600	3.85	4.40	2.85
KF50	Tube	2	Copper	250	3.15	4.10	2.15
KF50	Pin	2	Copper	250	3.15	4.10	2.15

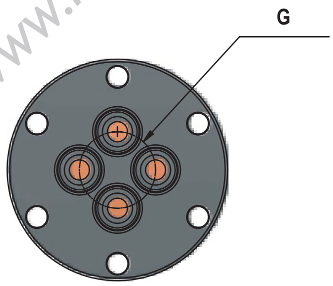
CF Flange Voltage: 5,000 Amperage: 1;2;5;15;30

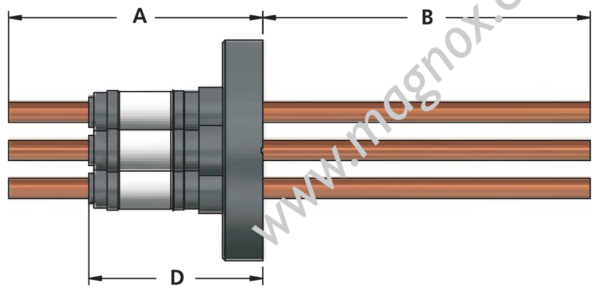


Flange Size	Pins or Tubes	#of Pins or Tubes	Conductor Material	Amps Per Pin/Tube	Dimensions, (in.)			
					A	B	D	G
1.33" CF	Pin	1	Nickel	5	1.85	2.15	0.85	N/A
2.75" CF	Pin	1	Nickel	5	1.85	2.15	0.85	N/A
1.33" CF	Pin	1	Nickel	15	2.30	5.00	1.20	N/A
2.75" CF	Pin	1	Nickel	15	2.30	5.00	1.20	N/A
1.33" CF	Pin	1	Stainless Steel	1	1.85	2.15	0.85	N/A
2.75" CF	Pin	1	Stainless Steel	1	1.85	2.15	0.85	N/A
1.33" CF	Pin	1	Stainless Steel	2	2.30	5.00	1.20	N/A
2.75" CF	Pin	1	Stainless Steel	2	2.30	5.00	1.20	N/A
1.33" CF	Pin	1	Copper	15	1.85	2.15	0.85	N/A
2.75" CF	Pin	1	Copper	15	1.85	2.15	0.85	N/A
1.33" CF	Pin	1	Copper	30	2.30	5.00	1.20	N/A
2.75" CF	Pin	1	Copper	30	2.30	5.00	1.20	N/A
1.33" CF	Pin	2	Nickel	5	2.37	1.63	1.37	0.31
2.75" CF	Pin	2	Nickel	5	1.87	2.13	0.87	0.31
1.33" CF	Pin	2	Nickel	15	2.25	5.32	1.23	0.36
2.75" CF	Pin	2	Nickel	15	2.30	5.00	1.20	0.75
1.33" CF	Pin	2	Stainless Steel	1	2.37	1.63	1.37	0.31
2.75" CF	Pin	2	Stainless Steel	1	1.87	2.13	0.87	0.31
2.75" CF	Pin	2	Stainless Steel	2	2.30	5.00	1.20	0.75
1.33" CF	Pin	2	Copper	15	2.37	1.63	1.37	0.31
2.75" CF	Pin	2	Copper	15	1.87	2.13	0.87	0.31
1.33" CF	Pin	2	Copper	30	2.25	5.32	1.23	0.36
2.75" CF	Pin	2	Copper	30	2.30	5.00	1.20	0.75
1.33" CF	Pin	4	Nickel	15	2.00	5.80	1.00	0.41
1.33" CF	Pin	4	Copper	30	2.00	580	1.00	0.41
1.33" CF	Pin	4	Nickel	5	2.37	1.63	1.37	0.375
2.75" CF	Pin	4	Nickel	5	1.87	2.13	0.87	0.375
1.33" CF	Pin	4	Stainless Steel	1	2.37	1.63	1.37	0.375
2.75" CF	Pin	4	Stainless Steel	1	1.87	2.13	0.87	0.375
1.33" CF	Pin	4	Copper	15	2.37	1.63	1.37	0.375
2.75" CF	Pin	4	Copper	15	1.87	2.13	0.87	0.375
2.75" CF	Pin	4	Nickel	15	2.25	5.32	1.23	0.62
2.75" CF	Pin	4	Copper	30	2.25	5.32	1.23	0.62
2.75" CF	Pin	8	Nickel	5	1.60	2.40	0.60	0.75
2.75" CF	Pin	8	Nickel	15	2.20	5.60	1.20	1.10
2.75" CF	Pin	8	Copper	30	2.25	5.32	1.23	1.00
2.75" CF	Pin	12	Nickel	15	2.20	5.60	1.20	1.20
2.75" CF	Pin	12	Copper	30	2.25	5.32	1.23	1.21

MAGNOX

CF Flange Voltage: 5,000 Amperage: 7;75;150



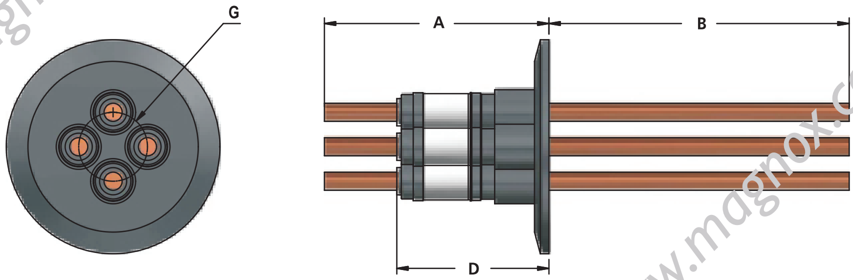


Flange Size	Pins or Tubes	#of Pins or Tubes	Conductor Material	Amps Per Pin/Tube	Dimensions, (in.)			
					A	B	D	G
1.33" CF	Pin	1	Nickel	75	3.13	4.12	2.13	N/A
2.75" CF	Pin	1	Nickel	75	3.13	4.12	2.13	N/A
1.33" CF	Pin	1	Stainless Steel	7	3.13	4.12	2.13	N/A
2.75" CF	Pin	1	Stainless Steel	7	3.13	4.12	2.13	N/A
2.75" CF	Tube	1	Stainless Steel	7	3.13	4.12	2.13	N/A
1.33" CF	Pin	1	Copper	150	3.13	4.12	2.13	N/A
1.33" CF	Tube	1	Copper	150	3.13	4.12	2.13	N/A
2.75" CF	Pin	1	Copper	150	3.13	4.12	2.13	N/A
2.75" CF	Tube	1	Copper	150	3.13	4.12	2.13	0.87
2.75" CF	Pin	2	Nickel	75	3.13	4.12	2.13	0.87
2.75" CF	Pin	2	Copper	150	3.13	4.12	2.13	0.87
2.75" CF	Tube	2	Copper	150	3.13	4.12	2.13	0.95
2.75" CF	Tube	3	Stainless Steel	7	3.18	4.07	2.18	0.95
2.75" CF	Pin	3	Copper	150	3.18	4.07	2.18	0.95
2.75" CF	Tube	3	Copper	150	3.18	4.07	2.18	0.95
2.75" CF	Pin	4	Nickel	75	3.18	4.07	2.18	0.95
2.75" CF	Pin	4	Stainless Steel	7	3.18	4.07	2.18	0.95
2.75" CF	Pin	4	Copper	150	3.18	4.07	2.18	0.95
2.75" CF	Tube	4	Copper	150	3.18	4.07	2.18	0.95

Electrical Feedthroughs

MAGNOX

KF Flange Voltage: 5,000 Amperage: 1;2;5;15;30

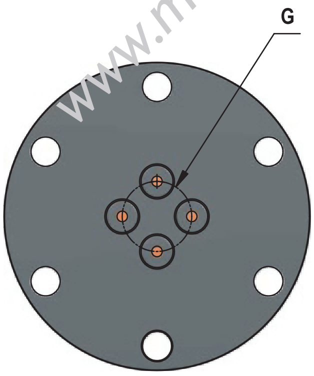


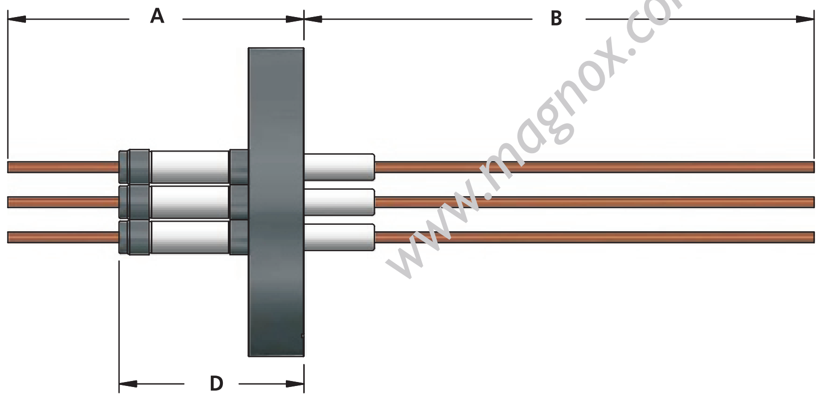
Flange Size	pins or Tubes	#of Pins or Tubes	Conductor Material	Amps / Pin/	Dimensions, (in.)			
					A	B	D	G
KF16	Pin	1	Nickel	5	1.85	2.15	0.85	N/A
KF40	Pin	1	Nickel	5	1.85	2.15	0.85	N/A
KF16	Pin	1	Nickel	15	2.30	5.00	1.20	N/A
KF40	Pin	1	Nickel	15	2.30	5.00	1.20	N/A
KF16	Pin	1	Stainless Steel	1	1.85	2.15	0.85	N/A
KF40	Pin	1	Stainless Steel	1	1.85	2.15	0.85	N/A
KF16	Pin	1	Stainless Steel	2	2.30	5.00	1.20	N/A
KF40	Pin	1	Stainless Steel	2	2.30	5.00	1.20	N/A
KF16	Pin	1	Copper	15	1.85	2.15	0.85	N/A
KF40	Pin	1	Copper	15	1.85	2.15	0.85	N/A
KF16	Pin	1	Copper	30	2.30	5.00	1.20	N/A
KF40	Pin	1	Copper	30	2.30	5.00	1.20	N/A
KF16	Pin	2	Nickel	5	1.87	2.13	0.87	0.31
KF25	Pin	2	Nickel	5	1.87	2.13	0.87	0.31
KF40	Pin	2	Nickel	5	1.87	2.13	0.87	0.31
KF40	Pin	2	Nickel	15	2.30	5.00	1.20	0.75
KF50	Pin	2	Nickel	15	2.30	5.00	1.20	0.95
KF16	Pin	2	Stainless Steel	1	1.87	2.13	0.87	0.31
KIF25	Pin	2	Stainless Steel	1	1.87	2.13	0.87	0.31
KF40	Pin	2	Stainless Steel	1	1.87	2.13	0.87	0.31
KF40	Pin	2	Stainless Steel	2	2.30	5.00	1.20	0.75
KF16	Pin	2	Copper	15	1.87	2.13	0.87	0.31
KF25	Pin	2	Copper	15	1.87	2.13	0.87	0.31
KF40	Pin	2	Copper	15	1.87	2.13	0.87	0.31
KF16	Pin	2	Copper	30	1.95	5.62	0.93	0.39
KF25	Pin	2	Copper	30	2.30	5.00	1.20	0.50
KF40	Pin	2	Copper	30	2.30	5.00	1.20	0.75
KF16	Pin	4	Nickel	5	1.87	2.13	0.87	0.375
KF40	Pin	4	Nickel	5	1.87	2.13	0.87	0.375
KF16	Pin	4	Stainless Steel	1	1.87	2.13	0.87	0.375
KF25	Pin	4	Stainless Steel	1	1.87	2.13	0.87	0.375
KF40	Pin	4	Stainless Steel	1	1.87	2.13	0.87	0.375
KF16	Pin	4	Copper	15	1.87	2.13	0.87	0.375
KF25	Pin	4	Copper	15	1.87	2.13	0.87	0.375
KF40	Pin	4	Copper	15	1.87	2.13	0.87	0.375
KF50	Pin	4	Copper	15	1.87	2.13	0.87	0.375
KF40	Pin	4	Copper	30	1.95	5.62	0.93	0.62
KF40	Pin	8	Copper	30	1.95	5.62	0.93	1.00

KF Flange Voltage: 5,000 Amperage: 150

Flange Size	#of Pins	Conductor Material	Amps / Pin	Dimensions, (in.)					
				A	B	C	D	E	F
KF16	1	Copper	150	3.13	4.12	1.33	2.13	0.54	0.25
KF50	4	Copper	150	3.18	4.07	2.75	2.18	0.57	0.25

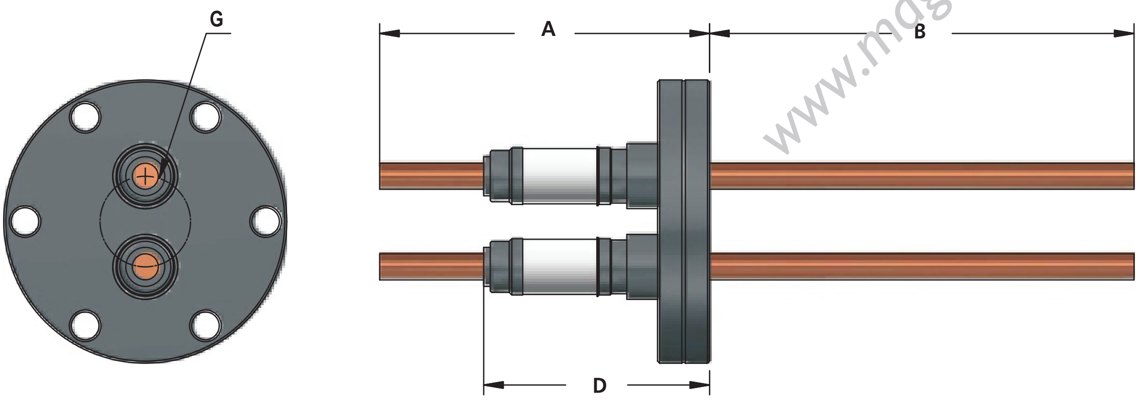
CF Flange Voltage: 12,000 Amperage: 30





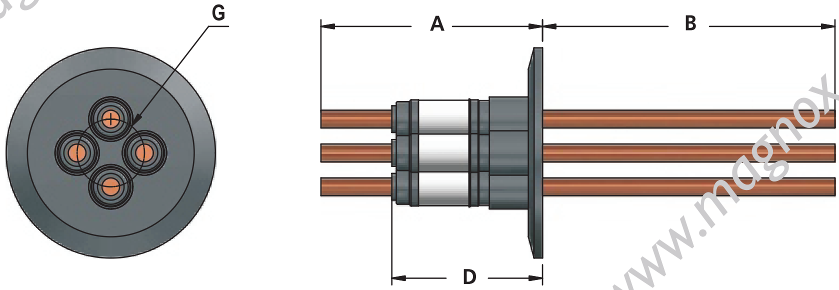
Flange Size	#of Pins or Tubes	Conductor Material	Amps / Pin	Dimensions, (in.)			
				A	B	D	G
1.33" CF	1	Nickel	15	2.63	4.94	1.67	N/A
1.33" CF	1	Copper	30	2.63	4.94	1.67	N/A
2.75" CF	1	Nickel	15	2.63	4.94	1.67	N/A
2.75" CF	1	Copper	30	2.63	4.94	1.67	N/A
2.75" CF	2	Copper	30	2.63	4.94	1.67	0.50
2.75" CF	2	Nickel	15	2.63	4.94	1.67	0.75
2.75" CF	4	Nickel	15	2.70	4.10	0.70	1.00
2.75" CF	4	Copper	30	2.70	4.10	0.70	1.00

CF(QF) Flange Voltage: 12,000 Amperage: 7;75;150



Flange Size	pins or Tubes	#of Pins or Tubes	Conductor Material	Amps / Pin	Dimensions, (in.)			
					A	B	D	G
1.33" CF	Tube	1	Nickel	75	3.10	4.20	2.10	N/A
1.33" CF	Tube	1	Stainless Steel	7	3.10	4.20	2.10	N/A
1.33" CF	Tube	1	Copper	150	3.10	4.20	2.10	N/A
2.75" CF	Tube	1	Nickel	75	3.10	4.20	2.10	N/A
2.75" CF	Tube	1	Stainless Steel	7	3.10	4.20	2.10	N/A
2.75" CF	Tube	1	Copper	150	3.10	4.20	2.10	N/A
1.33" CF	Pin	1	Nickel	75	3.10	4.20	2.10	N/A
1.33" CF	Pin	1	Stainless Steel	7	3.10	4.20	2.10	N/A
1.33" CF	Pin	1	Copper	150	3.10	4.20	2.10	N/A
2.75" CF	Pin	1	Nickel	75	3.10	4.20	2.10	N/A
2.75" CF	Pin	1	Stainless Steel	7	3.10	4.20	2.10	N/A
2.75" CF	Pin	1	Copper	150	3.10	4.20	2.10	N/A
2.75" CF	Pin	2	Nickel	75	3.10	4.20	2.10	0.87
2.75" CF	Tube	2	Nickel	75	3.10	4.20	2.10	0.87
2.75" CF	Pin	2	Stainless Steel	7	3.10	4.20	2.10	0.87
2.75" CF	Tube	2	Stainless Steel	7	3.10	4.20	2.10	0.87
2.75" CF	Pin	2	Copper	150	3.10	4.20	2.10	0.87
2.75" CF	Tube	2	Copper	150	3.10	4.20	2.10	0.87
2.75" CF	Pin	3	Nickel	75	3.10	4.20	2.10	0.87
2.75" CF	Tube	3	Copper	150	3.10	4.20	2.10	0.87
2.75" CF	Pin	4	Copper	150	2.90	4.40	2.10	0.94
2.75" CF	Tube	4	Copper	150	2.90	4.40	2.10	0.94

KF Flange Voltage: 12,000 Amperage: 15;30



Flange Size	#of Pins	Conductor Material	Amps/ Pin	Dimensions, (in.)			
				A	B	D	G
KF16	1	Nickel	15	2.63	4.94	1.67	N/A
KF16	1	Copper	30	2.63	4.94	1.67	N/A
KF40	1	Nickel	15	2.63	4.94	1.67	N/A
KF40	1	Copper	30	2.63	4.94	1.67	N/A
KF25	1	Copper	30	2.63	4.94	1.67	0.39
KF40	2	Copper	30	2.63	4.94	1.67	0.50
KF40	2	Nickel	15	2.63	4.94	1.67	0.75
KF40	4	Nickel	15	2.33	5.20	1.37	0.62
KF40	4	Copper	30	2.33	5.20	1.37	0.62

Voltage: 12,000 Amperage: 7;15;150

Flange Size	pins or Tubes	#of Pins	Conductor Material	Amps/ Pin	Dimensions, (in.)			
					A	B	D	G
KF16	Tube	1	Nickel	75	3.10	4.20	2.10	N/A
KF16	Tube	1	Stainless Steel	7	3.10	4.20	2.10	N/A
KF16	Tube	1	Copper	150	3.10	4.20	2.10	N/A
KF40	Tube	1	Nickel	75	3.10	4.20	2.10	N/A
KF40	Tube	1	Stainless Steel	7	3.10	4.20	2.10	N/A
KF40	Tube	1	Copper	150	3.10	4.20	2.10	N/A
KF16	Pin	1	Nickel	75	3.10	4.20	2.10	N/A
KF16	Pin	1	Stainless Steel	7	3.10	4.20	2.10	N/A
KF16	Pin	1	Copper	150	3.10	4.20	2.10	N/A
KF40	Pin	1	Nickel	75	3.10	4.20	2.10	N/A
KF40	Pin	1	Stainless Steel	7	3.10	4.20	2.10	N/A
KF40	Pin	1	Copper	150	3.10	4.20	2.10	N/A
KF25	Pin	1	Nickel	75	3.10	4.20	2.10	N/A
KF25	Pin	1	Stainless Steel	7	3.10	4.20	2.10	N/A
KF25	Pin	1	Copper	150	3.10	4.20	2.10	N/A
KF50	Pin	1	Copper	150	3.10	4.20	2.10	N/A
KF40	Pin	2	Nickel	75	3.10	4.20	2.10	0.75
KF40	Tube	2	Nickel	75	3.10	4.20	2.10	0.75
KF40	Pin	2	Stainless Steel	7	3.10	4.20	2.10	0.75
KF40	Tube	2	Stainless Steel	7	3.10	4.20	2.10	0.75
KF40	Pin	2	Copper	150	3.10	4.20	2.10	0.75
KF40	Tube	2	Copper	150	3.10	4.20	2.10	0.75
KF50	Pin	2	Copper	150	2.90	4.40	2.10	0.94
KF50	Pin	4	Stainless Steel	7	2.90	4.40	2.10	0.94
KF50	Pin	4	Copper	150	2.90	4.40	2.10	0.94
KF50	Tube	4	Copper	150	2.90	4.40	2.10	0.94

Electrical Feedthroughs

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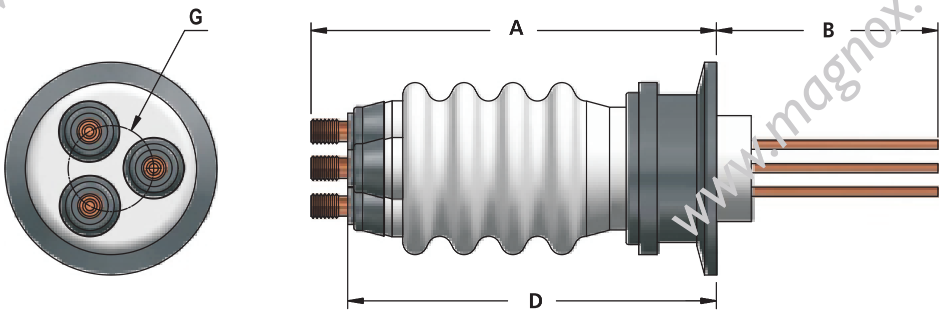
KF Flange Voltage: 20,000 ;25,000;30,000 Amperage: 2;15;30;75;150



Flange Size	#of Pins	Atm. Side Thread	Amps/ Pin	Voltage (kV)	Conductor Material	Dimensions, (in.)			
						A	B	D	H
KF16	1	¼-28	15	20	Nickel	2.63	5.63	2.80	N/A
KF40	1	¼-28	15	20	Nickel	2.63	5.63	2.80	N/A
KF40	1	¼-28	2	20	Stainless Steel	2.63	5.63	2.80	N/A
KF40	1	N/A	75	20	Nickel	2.63	3.47	2.78	N/A
KF40	1	N/A	150	20	Copper	2.63	3.47	2.78	N/A
KF40	1	¼-28	3	25	Stainless Steel	2.63	5.31	3.19	N/A
KF40	1	¼-28	3	30	Stainless Steel	2.63	4.70	3.72	N/A
KF40	2	¼-28	30	25	Copper	2.33	1.82	3.66	0.88
KF40	3	¼-28	30	25	Copper	2.33	2.37	6.62	0.88

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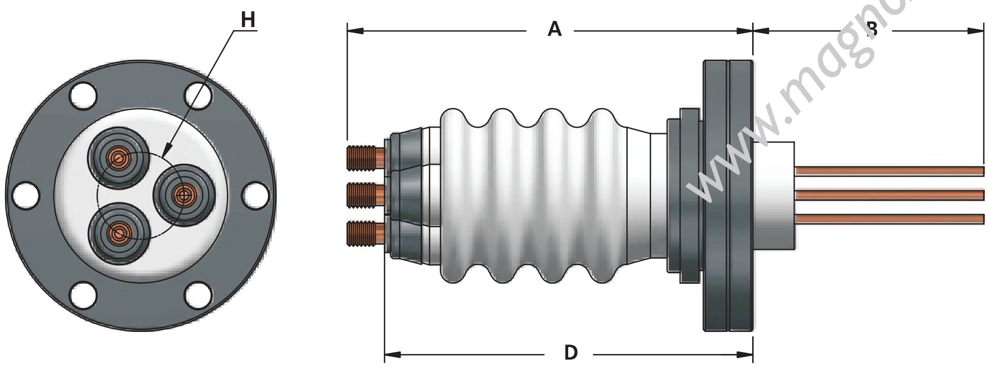
CF Flange

Voltages: 20,000 ;25,000; 30,000; 50,000; 60,000; 100,000

Amperage: 2; 3;15; 30; 75; 100; 150



Flange Size	#of Pins	Atm. Side Thread	Amps/ Pin	Voltage (kV)	Conductor Material	Dimensions, (in.)				
						A	B	D	G	H
1.33" CF	1	¼-28	15	20	Nickel	3.67	5.13	3.30	0.03	N/A
1.33" CF	1	¼-28	30	20	Copper	3.67	5.13	3.30	0.03	N/A
2.75" CF	1	¼-28	2	20	Stainless Steel	3.17	5.63	2.80	0.03	N/A
2.75" CF	1	N/A	75	20	Nickel	3.78	3.47	2.78	0.59	N/A
2.75" CF	1	N/A	150	20	Copper	3.78	3.47	2.78	0.59	N/A
2.75" CF	1	¼-28	3	25	Stainless Steel	3.57	5.31	3.19	N/A	N/A
2.75" CF	1	¼-28	3	30	Stainless Steel	4.10	4.70	3.72	0.62	N/A
2.75" CF	1	¼-28	55	30	Copper	4.10	4.70	3.72	0.62	N/A
4.5" CF	1	½-28	3	60	Stainless Steel	7.82	4.61	6.82	0.86	N/A
6"CF	1	¼-28	3	60	Stainless Steel	7.82	4.61	6.82	0.86	N/A
2.75"CF	1	¼-28	30	25	Copper	4.04	1.82	3.66	0.70	0.88
2.75" CF	2	¼-28	30	25	Copper	4.00	2.37	3.62	0.70	0.88
6"CF	3	¼-28	30	25	Copper	4.00	2.37	3.62	0.70	0.88

CF Flange

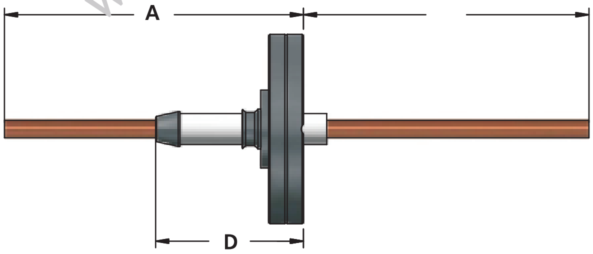


Figure 1 (1 tube)

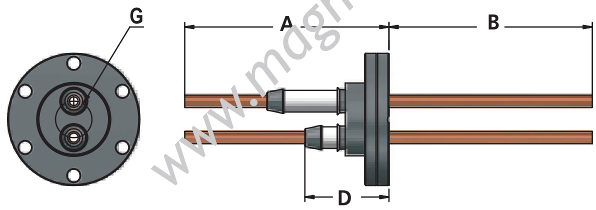


Figure 2 (2 tubes)

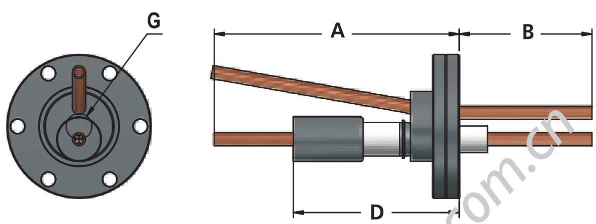


Figure 3 (2 tubes)

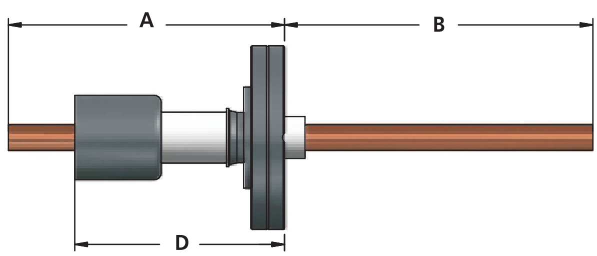


Figure 4 (1 tube)

Flange Size	#of Pins	Voltage (kV)	Conductor Material	Power (kW)	Frequency	Dimensions, (in.)			
						A	B	D	G
2.75"CF	1	8	Copper	10	450kHz	4.13	4.26	1.96	N/A
2.75"CF	2	8	Copper	10	450kHz	4.25	4.14	2.50	0.75
2.75"CF	2	10	Copper	20	13.56MHz	4.61	2.50	3.12	0.80
2.75"CF	1	10	Copper	35	13.56MHz	4.23	4.52	3.25	N/A

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CF(QF) Flange

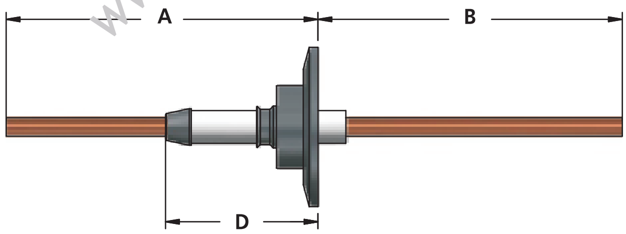


Figure 1 (1 tube)

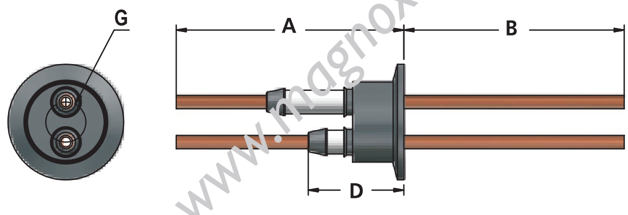


Figure 2 (2 tubes)

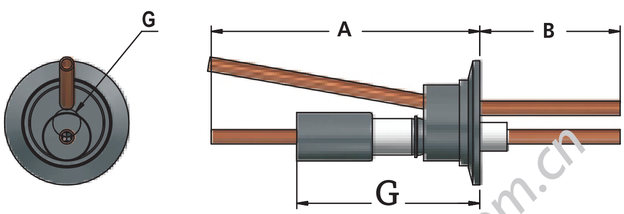


Figure 3 (2 tubes)

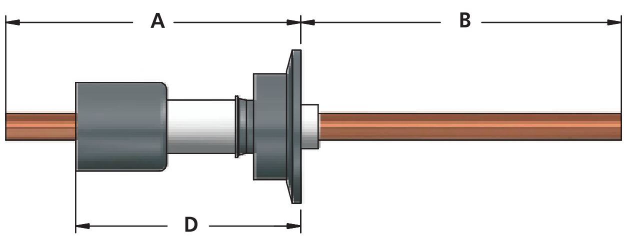


Figure 4 (1 tube)

Flange Size	#of Pins	Voltage (kV)	Conductor Material	Power (kW)	Frequency	Dimensions, (in.)			
						A	B	D	G
KF40	1	8	Copper	10	450kHz	4.03	4.31	1.91	N/A
KF40	2	8	Copper	10	450kHz	4.29	4.10	2.54	0.75
KF40	2	10	Copper	20	13.56MHz	4.65	2.45	3.16	0.80
KF40	1	10	Copper	35	13.56MHz	4.18	4.57	3.23	N/A

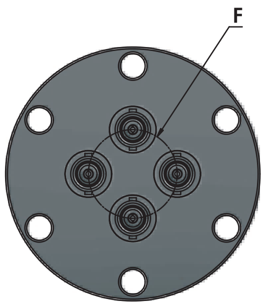
MAGNOX

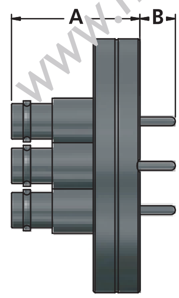
BNC Feedthroughs
BNC 引线

Bayonet navel connector (BNC) coaxial feedthroughs:

- Single-ended assemblies come with one air-side cable connector but with out vacuum-side connectors.
- Optional push on contacts and vacuum-compatible cables are available
- Feature grounded or floating shields
- Designed and rated for use in high vacuum and UHV applications
- Double-ended assemblies come with air-side connector only

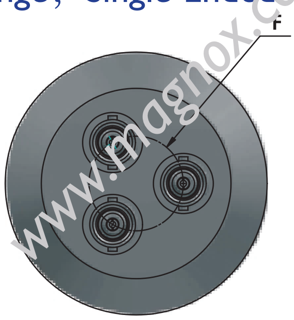
CF Flange，Single-Ended

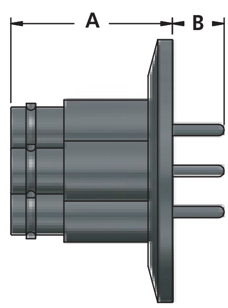




Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage (DC)	Amps/ Pin	Dimensions, (in.)		
							A	B	F
66826-0120321FTBG	1	Stainless Steel	Grounded	1.33"CF	500V	3	1.33	0.40	N/A
66826-0120331FTBG	1	Stainless Steel	Grounded	2.75"CF	500V	3	1.33	0.40	N/A
66826-0220331FTBG	2	Stainless Steel	Grounded	2.75"CF	500V	3	1.33	0.40	0.87
66826-0320331FTBG	3	Stainless Steel	Grounded	2.75"CF	500V	3	1.33	0.40	0.87
66826-0420331FTBG	4	Stainless Steel	Grounded	2.75"CF	500V	3	1.33	0.40	0.95
66826-0120321FTBF	1	Stainless Steel	Floating	1.33"CF	2500V	3	2.70	0.42	N/A
66826-0120331FTBF	1	Stainless Steel	Floating	2.75"CF	2500V	3	0.89	0.84	N/A

KF (QF)Flange，Single-Ended





Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage (DC)	Amps/ Pin	Dimensions, (in.)		
							A	B	F
66827-0120381FTBG	1	Stainless Steel	Grounded	KF16	500V	3	1.33	0.40	N/A
66827-012038B1FTBG	1	Stainless Steel	Grounded	KF40	500V	3	1.33	0.40	N/A
66827-022038B1FTBG	2	Stainless Steel	Grounded	KF40	500V	3	1.33	0.40	0.78
66827-032038B1FTBG	3	Stainless Steel	Grounded	KF40	500V	3	1.33	0.40	0.78
66827-032038C1FTBG	3	Stainless Steel	Grounded	KF40	500V	3	1.33	0.40	0.87
66827-042038B1FTBG	4	Stainless Steel	Grounded	KF50	500V	3	1.33	0.40	0.87
66827-042038C1FTBG	4	Stainless Steel	Grounded	KF40	500V	3	1.33	0.40	0.95
66827-052038C1FTBG	5	Stainless Steel	Grounded	KF50	500V	3	1.33	0.40	0.95
66827-0120381FTBF	1	Stainless Steel	Floating	KF16	2500V	3	2.70	0.50	N/A
66827-012038B1FTBF	1	Stainless Steel	Floating	KF40	2500V	3	0.89	0.84	N/A

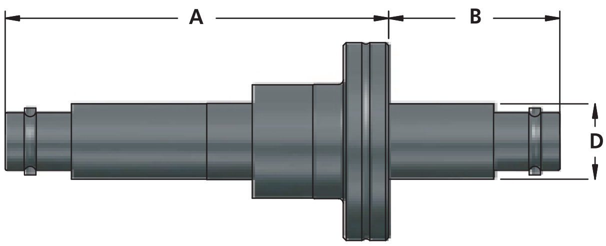
MAGNOX

Specifications

Maximurn Voltage:	500 VDC
Grounded Shield;	2,500 VDC
Floating Shield: Shield-Ground:	500 VDC
Floating Shield: ShieldPin:	3A
Maximum Current:	Stainless Steel
Conductor:	Alumina
nsulator:Cable:	RG-58U
Connection:	Bayonet
Vacuum Application:	HV or UHV
Temperature:	
Weld Adapter, CF:	-200° C to +450°C
KF, O-Ring, NPT	To +150°C
Max. Ramp Rate:	25° C/minute
Cable Connectors:	-65' C to +165°C

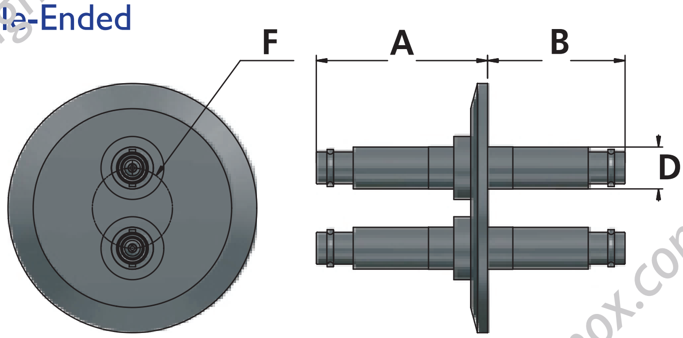
*NOTE: Standard feedthroughs are unmatched. 50-ohm matched impedance connectors are available at an additional cost.

CF Flange，Double-Ended



Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage (DC)	Amps/ Pin	Conductor Material	Dimensions, (in.)		
								A	B	D
66828-012032IFDBG	1	Stainless Steel	Grounded	1.33"CF	500V	3	Unmatched	2.53	1.13	0.50
66828-012033IFDBG	1	Stainless Steel	Grounded	2.75"CF	500V	3	Unmatched	2.03	1.63	0.50
66828-012033AIFDBG	1	Stainless Steel	Grounded	3.375"CF	500V	3	Unmatched	2.03	1.63	0.50
66828-012032MIFDBG	1	Stainless Steel	Grounded	1.33"CF	500V	3	Matched 50 Ohm	0.89	0.64	0.50
66828-012033MIFDBG	1	Stainless Steel	Grounded	2.75"CF	500V	3	Matched 50 Ohm	0.89	0.64	0.50
66828-012032IFDBF	1	Stainless Steel	Floating	1.33"CF	2500V	3	Unmatched	2.96	1.21	0.50
66828-012033IFDBF	1	Stainless Steel	Floating	2.75"CF	2500V	3	Unmatched	2.46	1.71	0.50
66828-042036IFDBF	4	Stainless Steel	Floating	4.5"CF	2500V	3	Unmatched	2.46	1.71	0.50

KF (QF) Flange，Double-Ended



Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage (DC)	Amps/ Pin	Conductor Material	Dimensions, (in.)			
								A	B	D	F
66829-012038IFDBG	1	Stainless Steel	Grounded	KF16	500V	3	Unmatched	2.53	1.63	0.50	N/A
66829-012038AIFDBG	1	Stainless Steel	Grounded	KF25	500V	3	Unmatched	2.03	1.63	0.50	N/A
66829-012038BIFDBG	1	Stainless Steel	Grounded	KF40	500V	3	Unmatched	2.03	1.63	0.50	N/A
66829-012038CIFDBG	1	Stainless Steel	Grounded	KF50	500V	3	Unmatched	2.53	1.63	0.50	N/A
66829-022038CIFDBG	2	Stainless Steel	Grounded	KF50	500V	3	Unmatched	2.03	1.63	0.50	0.95
66829-012038IFDBF	1	Stainless Steel	Floating	KF16	2500V	3	Unmatched	2.46	1.71	0.50	N/A
66829-012038AIFDBF	1	Stainless Steel	Floating	KF25	2500V	3	Unmatched	2.46	1.71	0.50	N/A
66829-012038BIFDBF	1	Stainless Steel	Floating	KF40	2500V	3	Unmatched	2.46	1.71	0.50	N/A

MAGNOX

Miniature High Voltage(MHV)

MHV引线

Feature grounded or floating shields
Designed and rated for use in high vacuum and UHV applications
Suitable for cryogenic temperatures
Single-ended assemblies come with one air-side cable connector.
without vacuum-side connectors. Options include
power push-on contacts and vacuum cable assemblies
Double-ended assemblies come with air-side connectors only

NOTE: Do not crossmate MHV feedthroughs with BNC feedthroughs.
MHV feedthroughs are rated at higher voltages

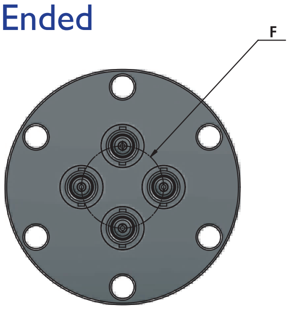
Specifications

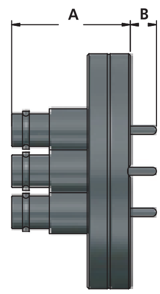
Maximum Voltage: Grounded Shield: 5.000 VDC
Floating Shield: Shield-Ground: 2,500 VDC
Floating Shield: Shield-Pin: 5,000 VDC

Maximum Current: 3A
Conductor: Stainless Steel
Insulator: Alumina
Cable: RG-59U
Connection: Bayonet
Vacuum Application: HV or UHV
Weld Adapter, CF: -200°C to +450°C
KF,O-Ring, NPT: to +150°C

Temperature: Max Ramp Rate: 25°C/minute
Cable Connectors: -65°C to +165°C

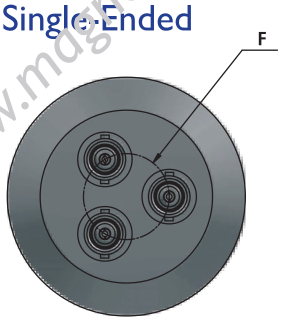
CF Flange， Single-Ended

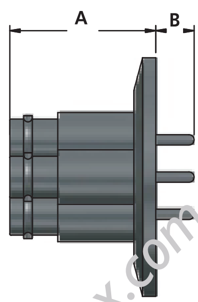




Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage (DC)	Amps/ Pin	Dimensions, (in.)	
							A	B
66830-012032IFTMG	1	Stainless Steel	Grounded	1.33"CF	5kV	3	1.33	0.35
66830-012033IFTMG	1	Stainless Steel	Grounded	2.75"CF	5kV	3	1.33	0.35
66830-022033IFTMG	2	Stainless Steel	Grounded	2.75"CF	5kV	3	1.33	0.35
66830-032033IFTMG	3	Stainless Steel	Grounded	2.75"CF	5kV	3	1.33	0.35
66830-042033IFTMG	4	Stainless Steel	Grounded	2.75"CF	5kV	3	1.33	0.35
66830-012032IFTMF	1	Stainless Steel	Floating	1.33"CF	2500V	3	2.70	0.42
66830-012033IFTMF	1	Stainless Steel	Floating	2.75"CF	2500V	3	0.84	0.84

KF(QF) Flange， Single-Ended

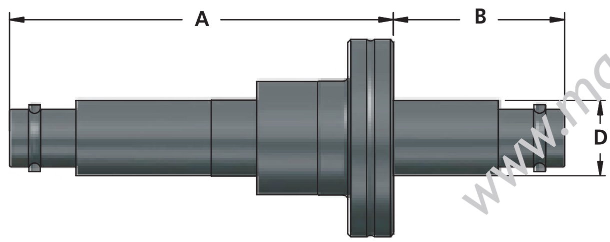




Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage (DC)	Amps/ Pin	Dimensions, (in.)		
							A	B	F
66831-012038IFTMG	1	Stainless Steel	Grounded	KF16	5kV	3	1.33	0.35	N/A
66831-012038BIFTMG	1	Stainless Steel	Grounded	KF40	5kV	3	1.33	0.35	N/A
66831-022038BIFTMG	2	Stainless Steel	Grounded	KF40	5kV	3	1.33	0.35	0.78
66831-032038BIFTMG	3	Stainless Steel	Grounded	KF40	5kV	3	1.33	0.35	0.78
66831-032038CIFTMG	3	Stainless Steel	Grounded	KF40	5kV	3	1.33	0.35	0.87
66831-042038BIFTMG	4	Stainless Steel	Grounded	KF50	5kV	3	1.33	0.35	0.95
66831-042038CIFTMG	4	Stainless Steel	Grounded	KF40	5kV	3	1.33	0.35	0.95
66831-012038IFTMF	1	Stainless Steel	Floating	KF16	2.5KeV	3	2.70	0.61	N/A
66831-012038BIFTMF	1	Stainless Steel	Floating	KF40	2.5KeV	3	0.84	0.84	N/A

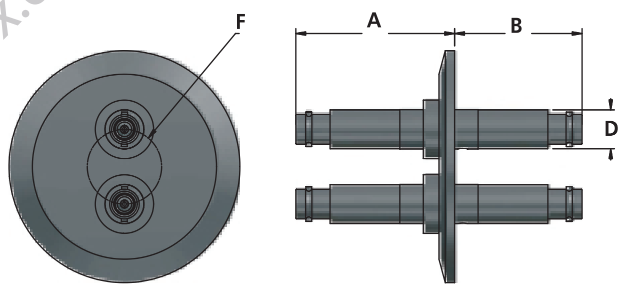
MAGNOX

CF Flange，Double-Ended



Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage (DC)	Amps/ Pin	Conductor Material	Dimensions, (in.)		
								A	B	D
66832-012032IFDMG	1	Stainless Steel	Grounded	1.33"CF	5kV	3	Unmatched	2.53	1.13	0.50
66832-012033IFDMG	1	Stainless Steel	Grounded	2.75"CF	5kV	3	Unmatched	2.03	1.63	0.50
66832-022033IFDMG	2	Stainless Steel	Grounded	2.75"CF	5kV	3	Unmatched	2.03	1.63	0.50
66832-012032IFDMF	1	Stainless Steel	Floating	1.33"CF	2500V	3	Unmatched	2.96	1.21	0.50
66832-012033IFDMF	1	Stainless Steel	Floating	2.75"CF	2500V	3	Unmatched	2.46	1.71	0.50

KF (QF) Flange，Double-Ended



Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage (DC)	Amps/ Pin	Dimensions, (in.)			
							A	B	D	F
66833-012038IFDMG	1	Stainless Steel	Grounded	KF16	5kV	3	2.03	1.63	0.50	N/A
66833-012038BIFDMG	1	Stainless Steel	Grounded	KF40	5kV	3	2.03	1.63	0.50	N/A
66833-022038CIFDMG	2	Stainless Steel	Grounded	KF50	5kV	3	2.03	1.63	0.50	0.95
66833-012038IFDMF	1	Stainless Steel	Floating	KF16	2.5KeV	3	2.46	1.71	0.50	N/A
66833-012038AIFDMF	1	Stainless Steel	Floating	KF25	2.5KeV	3	2.46	1.71	0.50	N/A
66833-012038BIFDMF	1	Stainless Steel	Floating	KF40	2.5KeV	3	2.46	1.71	0.50	N/A

SHV-B Feedthroughs

SHV–B引线

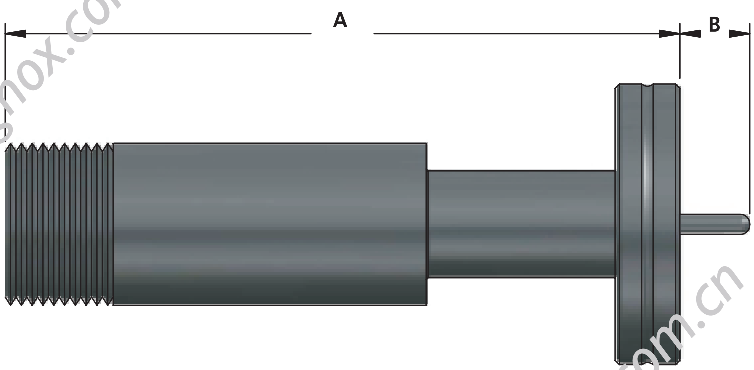
Safe, High Voltage, Bakeable (SHV-B) coaxial connectors:

Feature grounded shields
Use a ceramic dielectric suitable for baking at 450°C
Units excel in applications requiring the feedthrough to remain connected and operational at high temperatures
All asserblies come with air-side cable connectors. Vacuum- side, push-on connectors only available as optional extras

Specifications

Maximum Voltage:	
Grounded Shield:	7,500 VDC
Maximum Current:	3A
Conductor:	Stainless Steel
Insulator:	Alumina
Cable:	RG-59U
Connection:	Screw Thread
Vacuum Application:	HV or UHV
Temperature:	Weld Adapter, CF: -200°C to +450°C KF, O-Ring, NPT: to +150°C Max,Ramp Rate: 25° C/minute Cable Connectors: -200°C to +450°C

CF Flange， Single-Ended



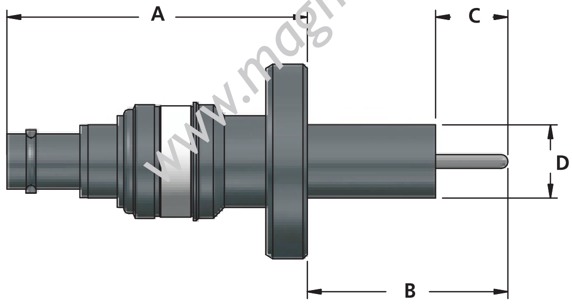
Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage (DC)	Amps/ Pin	Dimensions, (in.)	
							A	B
66834-012032IFTTG	1	Stainless Steel	Grounded	1.33"CF	7.5kV	3	3.08	0.36
66834-012033IFTTG	1	Stainless Steel	Grounded	2.75"CF	7.5kV	3	3.08	0.36

SHV-5 Feedthroughs SHV–5引线

Designed and rated for use in high vacuum and UHV applications.
Constructed of vacuum-grade materials,including 304 stainless steel conductor pins and mounts, high-purity alumina ceramic insulation, and vacuum-tube-grade braze alloys.
Recessed female contacts in cable connectors reduce the possiblity of electrical shock while preventing cross rmating with BNC- or MHV-style components.
These coaxial assemblies have one air-side cable connector, but no vacuum-side power push-on connectors.

Specifications

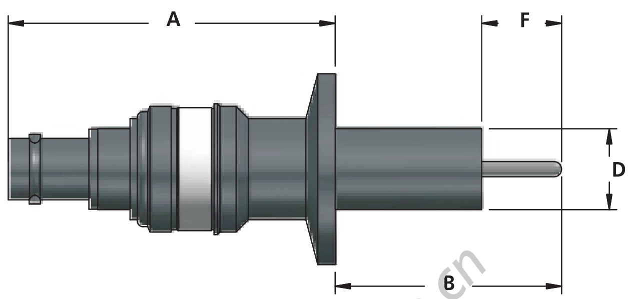
Maximum Voltage: Grounded Shield: 5,000 VDC
Shield-Ground: 2,500 VDC
Cable: Shield-Pin: 5,000 VDC
Connector: RG-59U
Vacuum Application: Bayonet
HV or UHV
Temperature: Weld Adapter, CF: -200°C to +450°C
KF, O-Ring,NPT: to +150°C
Max. Ramp Rate: 25°C/minute
Cable Connectors: -65°C to +165°C



CF Flange， Single-Ended

Part Number	#of Pins	Conductor Material	Shield	Conductor	Flange Size	Voltage (DC)	Amps/ Pin	Dimensions, (in.)			
								A	B	D	F
66836-011032IFTSG	1	Nickel	Grounded	Recessed	1.33"CF	5kV	5	1.60	0.37	1.33	0.094
66836-011033IFTSG	1	Nickel	Grounded	Recessed	2.75"CF	5kV	5	1.60	0.37	2.75	0.094
66836-021033IFTSG	2	Nickel	Grounded	Recessed	2.75"CF	5kV	5	1.60	0.37	2.75	0.094
66836-031033IFTSG	3	Nickel	Grounded	Recessed	2.75"CF	5kV	5	1.60	0.37	2.75	0.094
66836-041033IFTSG	4	Nickel	Grounded	Recessed	2.75"CF	5kV	5	1.60	0.37	2.75	0.094
66836-011032IFTSE	1	Nickel	Grounded	Exposed	1.33"CF	5kV	5	1.03	0.86	1.33	0.094
66836-011033IFTSE	1	Nickel	Grounded	Exposed	2.75"CF	5kV	5	1.03	0.86	2.75	0.094
66836-021033IFTSE	2	Nickel	Grounded	Exposed	2.75"CF	5kV	5	1.03	0.86	2.75	0.094
66836-031033IFTSE	3	Nickel	Grounded	Exposed	2.75"CF	5kV	5	1.03	0.86	2.75	0.094
66836-041033IFTSE	4	Nickel	Grounded	Exposed	2.75"CF	5kV	5	1.03	0.86	2.75	0.094
66836-011032IFTSF	1	Nickel	Floating	Recessed	1.33"CF	2.5keV	5	2.04	1.38	1.33	0.094
66836-011033IFTSF	1	Nickel	Floating	Recessed	2.75"CF	2.5keV	5	2.25	1.17	2.75	0.094

KF(QF) Flange， Single-Ended



Part Number	#of Pins	Conductor Material	Shield	Conductor	Flange Size	Voltage (DC)	Amps/ Pin	Dimensions, (in.)			
								A	B	D	F
66837-011038IFTSG	1	Nickel	Grounded	Recessed	KF16	5kV	5	1.60	0.37	0.094	N/A
66837-011038BIFTSG	1	Nickel	Grounded	Recessed	KF40	5kV	5	1.60	0.37	0.094	N/A
66837-031038CIFTSG	3	Nickel	Grounded	Recessed	KF50	5kV	5	1.60	0.37	0.094	0.87
66837-041038CIFTSG	4	Nickel	Grounded	Recessed	KF50	5kV	5	1.60	0.37	0.094	0.95
66837-011038IFTSE	1	Nickel	Grounded	Exposed	KF16	5kV	5	1.03	0.37	0.094	N/A
66837-011038BIFTSE	1	Nickel	Grounded	Exposed	KF40	5kV	5	1.03	0.95	0.094	N/A
66837-021038BIFTSE	2	Nickel	Grounded	Exposed	KF40	5kV	5	1.03	0.95	0.094	0.87
66837-031038CIFTSE	3	Nickel	Grounded	Exposed	KF50	5kV	5	1.03	0.95	0.094	0.87
66837-041038B1FTSE	4	Nickel	Grounded	Exposed	KF40	5kV	5	1.03	0.95	0.094	0.95
66837-041038CIFTSE	4	Nickel	Grounded	Exposed	KF50	5kV	5	1.03	0.95	0.094	0.95
66837-011038IFTSF	1	Nickel	Floating	Recessed	KF16	2.5keV	5	2.01	1.45	0.094	N/A
66837-011038BIFTSF	1	Nickel	Floating	Recessed	KF40	2.5keV	5	2.01	1.45	0.094	N/A

MAGNOX

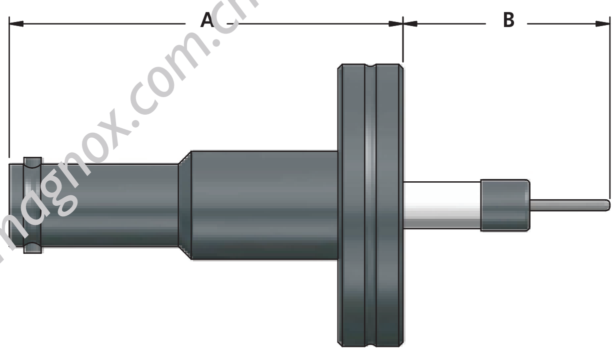
SHV-10 Feedthroughs
SHV−10引线

Designed and rated for use in high vacuum and UHV applications.
Constructed of vacuum-grade materals, including 304 stainless steel conductor pins and mounts, high-purity alumina ceramic insulation, and vacuum-tube-grade braze alloys.
Recessed female contacts in cable connecors reduce the possibility of electrical shock while preventing cross mating with BNC-or MHV-style components
These coaxial assemblies have one air-side cable connector, but no vacuum-side power push-on connectors.

Specifications

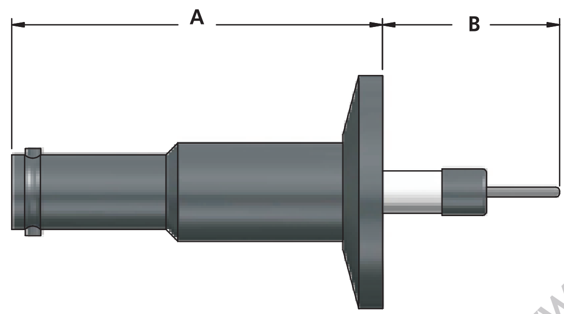
Maximum Voltage:	
Grounded Shield:	10,000 VDC
Maximum Current:	5A
Conductor:	Nickel
Insulator:	Alumina
Cable:	RG-58,58A,58C/U
Connection:	Bayonet
Vacuum Application:	HV or UHV
Temperature:	Weld Adapter, CF: -200°C to +450°C Max,Ramp Rate: 25°C/minute Cable Connectors: -65°C to +165°C

CF Flange， Single-Ended



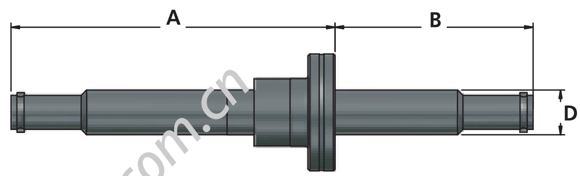
Part Number	Flange Size	#of Pins	Amps/ Pin	Voltage (DC)	Shield	Conductor Material	Conductor	Dimensions, (in.)	
								A	B
66838-0110521FTVG	1.33"CF	1	5	10kV	Grounded	Nickel	Recessed	2.40	0.38
66838-0110531FTVG	2.75"CF	1	5	10kV	Grounded	Nickel	Recessed	2.40	0.38
66838-0210531FTVG	2.75"CF	2	5	10kV	Grounded	Nickel	Recessed	2.40	0.38
66838-0310531FTVG	2.75"CF	3	5	10kV	Grounded	Nickel	Recessed	2.40	0.38
66838-0410531FTVG	2.75"CF	4	5	10kV	Grounded	Nickel	Exposed	2.40	0.38
66838-0110521FTVE	1.33"CF	1	5	10kV	Grounded	Nickel	Exposed	1.77	1.00
66838-0110531FTVE	2.75"CF	1	5	10kV	Grounded	Nickel	Exposed	1.77	1.00
66838-0210531FTVE	2.75"CF	2	5	10kV	Grounded	Nickel	Exposed	1.77	1.00
66838-0310531FTVE	2.75"CF	3	5	10kV	Grounded	Nickel	Exposed	1.77	1.00
66838-0410531FTVE	2.75"CF	4	5	10kV	Grounded	Nickel	Exposed	1.77	1.00

KF(QF) Flange， Single-Ended



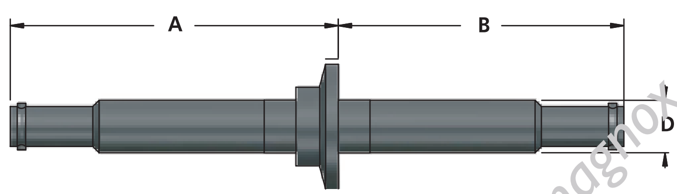
Part Number	Flange Size	#of Pins	Amps/ Pin	Voltage (DC)	Shield	Conductor Material	Conductor	Dimensions, (in.)	
								A	B
66839-011058IFTVG	KF16	1	5	10kV	Grounded	Nickel	Recessed	2.40	0.38
66839-011058BIFTVG	KF40	1	5	10kV	Grounded	Nickel	Recessed	2.40	0.38
66839-021058BIFTVG	KF40	2	5	10kV	Grounded	Nickel	Recessed	2.40	0.38
66839-031058CIFTVG	KF50	3	5	10kV	Grounded	Nickel	Recessed	2.40	0.38
66839-041058CIFTVG	KF50	4	5	10kV	Grounded	Nickel	Recessed	2.40	0.38
66839-011058IFTVE	KF16	1	5	10kV	Grounded	Nickel	Exposed	1.77	1.00
66839-011058B1FTVE	KF40	1	5	10kV	Grounded	Nickel	Exposed	1.77	1.00
66839-021058B1FTVE	KF40	2	5	10kV	Grounded	Nickel	Exposed	1.77	1.00
66839-031058CIFTVE	KF50	3	5	10kV	Grounded	Nickel	Exposed	1.77	1.00
66839-041058CIFTVE	KF50	4	5	10kV	Grounded	Nickel	Exposed	1.77	1.00

CF Flange， Double-Ended



Part Number	Flange Size	#of Pins	Amps/ Pin	Voltage (DC)	Shield	Conductor Material	Dimensions, (in.)		
							A	B	D
66840-0110521FDVG	1.33"CF	1	5	10kV	Grounded	Nickel	3.73	2.83	0.495
66840-011053IFDVG	2.75"CF	1	5	10kV	Grounded	Nickel	3.73	2.83	0.495

KF（QF） Flange， Double-Ended



Part Number	Flange Size	#of Pins	Amps/ Pin	Voltage (DC)	Shield	Conductor Material	Dimensions, (in.)		
							A	B	D
66841-011058IFDVG	KF16	1	5	10kV	Grounded	Nickel	3.23	2.83	0.495
66841-011058BIFDVG	KF40	1	5	10kV	Grounded	Nickel	3.23	2.83	0.495

SHV-20 Feedthroughs

SHV–20引线

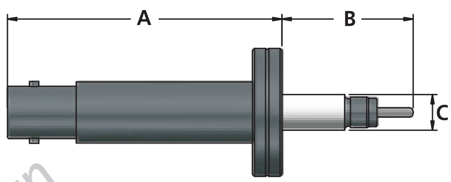
Safe, High Voltage to 20kV (SHV-20) coaxial feedthroughs:

Feature grounded shields
Have recessed or exposed ceramic insulators
Offer the highest voltage and current ratings of the SHV line
Recessed female contacts in cable connectors reduce the possibility of electrical shock
Assemblies have air-side cable connectors (vacuum-side push-on connectors are available as accessories)

Specifications

Maximum Voltage:
Grounded Shield: 20,000 VDC
Maximum Current: 15A
Conductor: Nickel
Insulator: Alumina
Cable: RG-8U
Connection: Bayonet
Vacuum Application: HV or UHV
Temperature: Weld Adapter, CF: -200°C to +450°C
Max,Ramp Rate: 25°C/minute
Cable Connectors: -40°C to +100°C

CF Flange， Single-Ended



Part Number	#of Pins	Conductor Material	Shield	Flange Size	Conductor	Voltage (DC)	Amps/ Pin	Dimensions, (in.)		
								A	B	C
66842-0111521FTXG	1	Nickel	Grounded	1.33"CF	Recessed	20kV	15	3.76	0.36	1.33
66842-0111521FTXE	1	Nickel	Grounded	1.33"CF	Exposed	20kV	15	3.75	0.36	1.33
66842-0211531FTXE	2	Nickel	Grounded	2.75"CF	Exposed	20kV	15	3.75	1.37	2.75

MAGNOX

Type N Coaxial Feedthroughs

N系列同轴引线

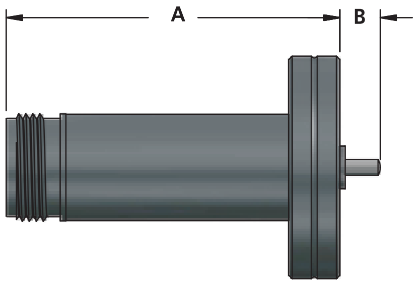
Use Nickel as conductor materia.
Feature grounded shields.
Feedthroughs have air side cable connectors (vacuum-side push-on connectors are available as accessories for single- ended versions only) .

Specifications

Maximum Voltage:
Grounded Shield: 500 VDC
Maximum Current: 3A
Conductor: Nickel
Insulator: Alumina
Cable: RG-8U，RG-9U，RG-10U
Connection: Screw Thread
Vacuum Application: HV or UHV

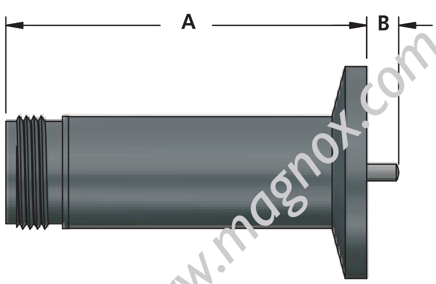
Temperature: Weld Adapter, CF: -200°C to +450°C
KF, O-Ring, NPT: to +150°C
Max. Ramp Rate: 25°C/minute
Cable Connectors: -65°C to +165°C

CF Flange， Single-Ended



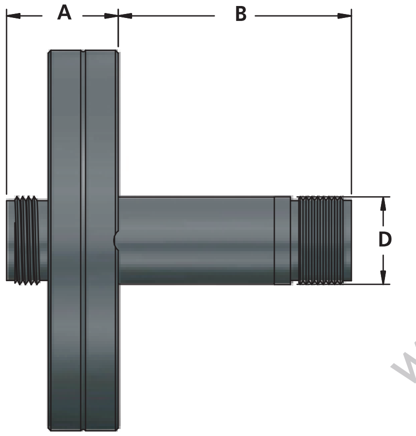
Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Dimensions, (in.)	
							A	B
66843-011032IFTNG	1	Nickel	Grounded	1.33"CF	500V	3	1.91	0.26
66843-011033IFTNG	1	Nickel	Grounded	2.75"CF	500V	3	1.91	0.26

KF(QF) Flange， Single-Ended



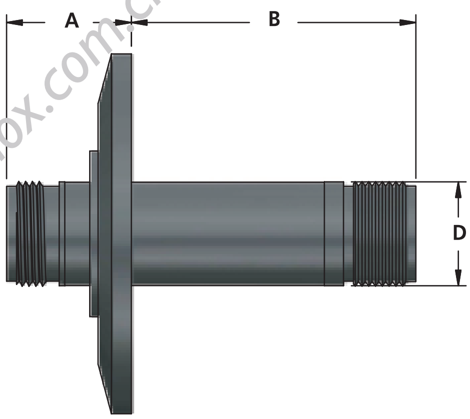
Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Dimensions, (in.)	
							A	B
66844-011038IFTNG	1	Nickel	Grounded	KF16	500V	3	1.91	0.26
66844-011038IBFTNG	1	Nickel	Grounded	KF40	500V	3	1.91	0.26

CF Flange， Double-Ended



Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Dimensions, (in.)		
							A	B	D
66845-011033IFDNG	1	Nickel	Grounded	2.75"CF	500V	3	0.75	1.71	0.63

KF(QF) Flange， Double-Ended



Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Dimensions, (in.)		
							A	B	D
66846-011038BIFDNG	1	Nickel	Grounded	KF40	500V	3	0.75	1.71	0.63

MAGNOX

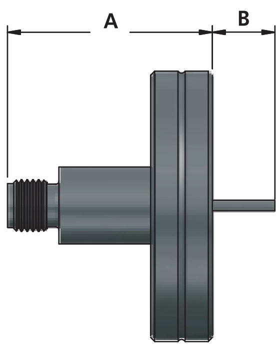
SMA Coaxial Feedthroughs
SMA同轴引线

Made of 304 stainless steel
Feature floating or grounded shields
Versions available with 50-ohm matched impedance
Feedthroughs have air-side cable connectors (vacuum-side, push-on connectors are available as accessories)

Specifications

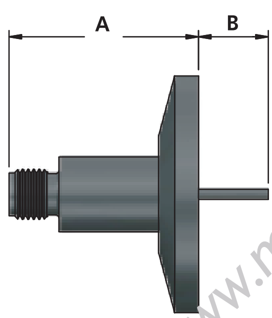
Maximum Voltage:	Grounded Shield: 700 VDC Floating Shield: Shield-Ground: 2,500 VDC Floating Shield: Shield-Pin: 700 VDC
Grounded Shield:	500 VDC
Maximum Current:	1A
Conductor:	48-52 ohms
Insulator:	Stainless Steel
Cable:	Alumina
Connection:	RG-8U,RG-9U.RG-10U
Vacuum Application:	Screw Thread HV or UHV
Temperature:	Weld Adapter, CF: -200°C to +450°C KF, O-RIng, NPT: To +150°C Max Ramp Rate: 25°C/minute Cable Connectors: -65°C to +165°C

CF Flange，Single-Ended



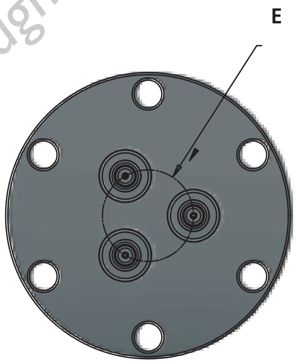
Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Dimensions, (in.)	
							A	B
66847-012012IFTCG	1	Stainless Steel	Grounded	1.33"CF	700V	1	1.00	0.35
66847-012013IFTCG	1	Stainless Steel	Grounded	2.75"CF	700V	1	1.00	0.35
66847-0120131FTCF	1	Stainless Steel	Floating	2.75"CF	2500V	1	0.72	0.70

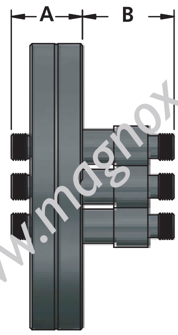
KF(QF) Flange，Single-Ended



Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Dimensions, (in.)	
							A	B
66848-012018IFTCG	1	Stainless Steel	Grounded	KF16	700V	1	1.00	0.35
66848-012018BIFTCG	1	Stainless Steel	Grounded	KF40	700V	1	1.00	0.35

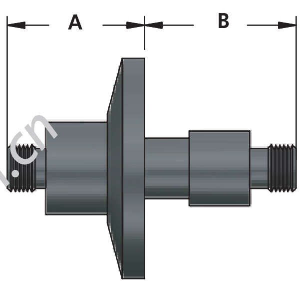
CF Flange， Double-Ended





Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Impedance	Dimensions, (in.)		
								A	B	E
66849-012012IFDCG	1	Stainless Steel	Grounded	1.33"CF	700V	1	50-Ohm Matched	0.63	0.92	N/A
66849-012013IFDCG	1	Stainless Steel	Grounded	2.75"CF	700V	1	50-Ohm Matched	0.63	0.92	N/A
66849-032013IFDCG	3	Stainless Steel	Grounded	2.75"CF	700V	1	50-Ohm Matched	0.63	0.92	0.87
66849-042013IFDCG	4	Stainless Steel	Grounded	2.75"CF	700V	1	50-Ohm Matched	0.63	0.92	0.87

KF(QF) Flange， Double-Ended



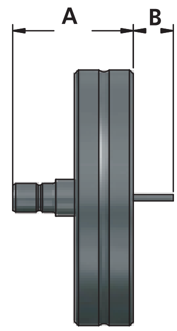
Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Impedance	Dimensions, (in.)	
								A	B
66850-012018IFDCG	1	Stainless Steel	Grounded	KF16	700V	1	50-Ohm Matched	0.63	0.92
66850-012018AIFDCG	1	Stainless Steel	Grounded	KF25	700V	1	50-Ohm Matched	0.63	0.92
66850-012018BIFDCG	1	Stainless Steel	Grounded	KF40	700V	1	50-Ohm Matched	0.63	0.92

SMB Coaxial Feedthroughs
SMB同轴引线

Conductors made of 416 stainless steel
Feature floating or grounded shields
Feedthroughs have air-side cable connectors (vacuum-side, push-on connectors available as accessories)

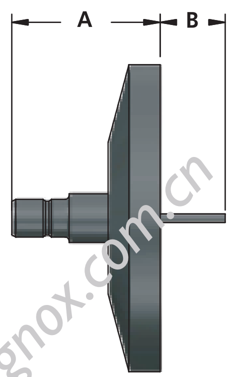
Specifications

Maximum Voltage:	Grounded Shield: 500 VDC Floating Shield: Shield-Ground: 1,000 VDC Floating Shield: Shield-Pin: 500 VDC
Maximum Current:	5A
Conductor:	Stainless Steel (type 416)
Insulator:	Alumina
Cable:	RG-174U
Connection:	Push Clip
Vacuum Application:	HV or UHV
Temperature:	Weld Adapter, CF: To +450°C KF, O-Ring, NPT: To +150°C Max. Ramp Rate: 25°C/minute Cable Connectors: -65°C to +165°C



CF Flange， Single-Ended

Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Dimensions, (in.)	
							A	B
66851-0120021FTDG	1	416 Stainless Steel	Grounded	1.33"CF	500V	0.5	0.57	0.27
66851-0120031FTDG	1	416 Stainless Steel	Grounded	2.75"CF	500V	0.5	0.57	0.27
66851-0120021FTDF	1	416 Stainless Steel	Floating	1.33"CF	1000V	0.5	0.51	0.33
66851-012003IFTDF	1	416 Stainless Steel	Floating	2.75"CF	1000V	0.5	0.51	0.33



KF(QF) Flange， Single-Ended

Part Number	#of Pins	Conductor Material	Shield	Flange Size	Voltage	Amps/ Pin	Dimensions, (in.)	
							A	B
66852-012008IFTDG	1	416 Stainless Steel	Grounded	KF16	500V	0.5	0.57	0.27
66852-012008BIFTDG	1	416 Stainless Steel	Grounded	KF40	500V	0.5	0.57	0.27
66852-012008BIFTDF	1	416 Stainless Steel	Floating	KF40	1000V	0.5	0.51	0.33
66852-012008IFTDF	1	416 Stainless Steel	Floating	KF16	1000V	0.5	0.51	0.33

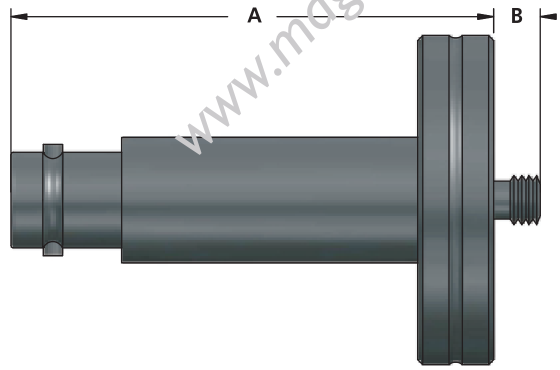
BNC TO Microdot Coaxial Feedthroughs

BNC转Mictdot同轴引线

Allow a means of adapting coaxial connection styles.
Typically used for deposition monitors (cystal head sensors),with the Microdot connection in vacuum and the BNC connection to cable to the controlle.
Assembly includes a single air-side connector.

Specifications

Maximum Voltage: 500 VDC
Grounded Shield:
Maximum Current: 1A
Conductor: Stainless Steel (type 416)
Insulator: Alumina
Cable: RG-58U
Connection: Bayonet
Vacuum Application: HV or UHV
Weld Adapter, CF:To +400°C
Temperature: KF, O-Ring, NPT:Ambient to +150°C
Max, Ramp Rate: 25°C/ minute
Cable Connectors: -65°C lo +165°C



CF Flange， Double-Ended

Part Number	#of Pins	Conductor Material	Voltage	Amps/ Pin	Flange Size	Shield	Dimensions, (in.) A	Dimensions, (in.) B
66853-012012IFDBM	1	Stainless Steel	500V	1	1.33"CF	Grounded	1.83	0.23
66853-012013IFDBM	1	Stainless Steel	500V	1	2.75"CF	Grounded	1.83	0.23

MAGNOX

Multi-Pin, Circular (MPC) Feedthroughs

MPC多芯引线

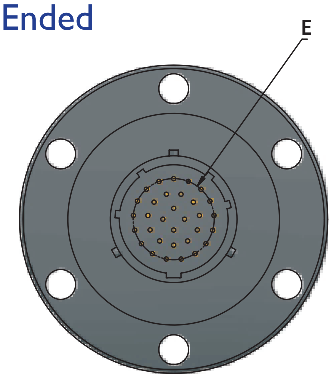
- Non-magnetic connector headers
- Available in configurations with 3, 6, 10, 19, 32,and 41 pins
- Feature stainless steel shells and gold-plated stainless steel alloy pins
- UHV compatible with a minimum leak rate of 1×10^{-9} scc He/sec.
- Single ended design consists of a plug on the air side with .040" diameter pins for connection on the vacuum side*
- Double-ended design has a plug on the airside and a threaded plug connection on the vacuum side*

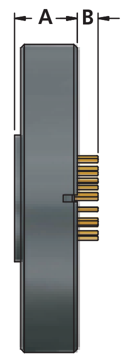
* Plugs not included with feedthroughs

Specifications

Conductor Material: Stainless Steel, Gold Plated
Insulator Material: Glass-Ceramic
Connection: Bayonet
Vacuum Application: HV or UHV
Max. Current: 5A
Max. Voltage: 1KV
Number of Pins: 3-41
Temperature Range:
Weld Adapter, CF: -269° C to +450° C
KF, O-Ring, NPT: -25° C to +205° C
Max. Ramp Rate: 25°C/minute
Air-Side Connector: -55° C to +35° C

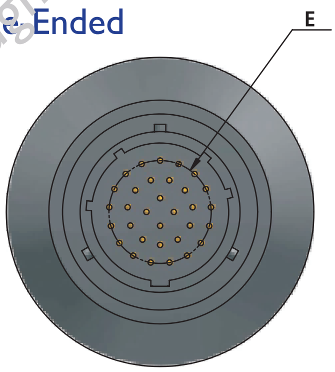
CF Flange，Single-Ended

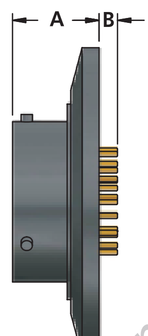




Part Number	#of Pins	Conductor Material	Voltage (DC)	Crimp or Solder	Amps/Pin	Flange Size	Dimensions, (in.)		
							A	B	E
66854-037013IFTRG	3	Gold-Plated SST	IkV	Crimp	5	2.75"CF	0.63	0.26	0.15
66854-067013IFTRG	6	Gold-Plated SST	IkV	Crimp	5	2.75"CF	0.63	0.26	0.26
66854-107013IFTRG	10	Gold-Plated SST	IkV	Crimp	5	2.75"CF	0.63	0.26	0.39
66854-197013IFTRG	19	Gold-Plated SST	IkV	Crimp	5	2.75"CF	0.63	0.26	0.52
66854-327013IFTRG	32	Gold-Plated SST	IkV	Crimp	5	2.75"CF	0.63	0.26	0.72
66854-417013AIFTRG	41	Gold-Plated SST	IkV	Crimp	5	3.375"CF	0.63	0.26	0.84

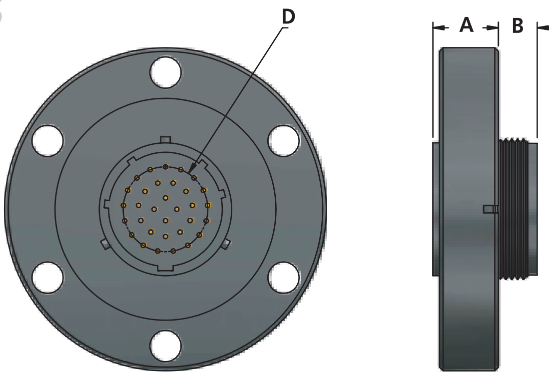
KF (QF)Flange，Single-Ended





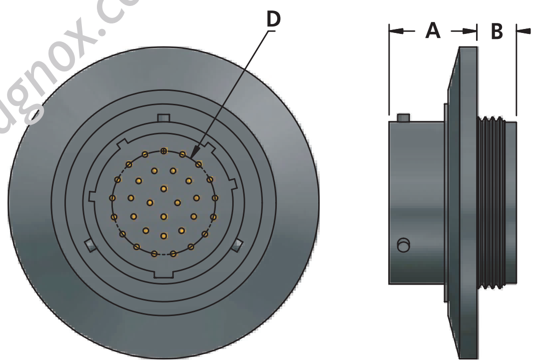
Part Number	#of Pins	Conductor Material	Voltage (DC)	Crimp or Solder	Amps/Pin	Flange Size	Dimensions, (in.)		
							A	B	E
66855-037018AIFTRG	3	Gold-Plated SST	IkV	Crimp	5	KF25	0.69	0.21	0.15
66855-067018BIFTRG	6	Gold-Plated SST	IkV	Crimp	5	KF40	0.69	0.21	0.26
66855-107018BIFTRG	10	Gold-Plated SST	IkV	Crimp	5	KF40	0.69	0.21	0.39
66855-197018BIFTRG	19	Gold-Plated SST	IkV	Crimp	5	KF40	0.69	0.21	0.52
66855-327018BIFTRG	32	Gold-Plated SST	IkV	Crimp	5	KF40	0.69	0.21	0.72
66855-417018CIFTRG	41	Gold-Plated SST	IkV	Crimp	5	KF50	0.69	0.21	0.84

CF Flange， Double-Ended



Part Number	#of Pins	Conductor Material	Voltage (DC)	Amps/Pin	Flange Size	Dimensions, (in.)		
						A	B	D
66856-037013IFDRG	3	Gold-Plated SST	1kV	5	2.75"CF	0.69	0.39	0.15
66856-067013IFDRG	6	Gold-Plated SST	1kV	5	2.75"CF	0.69	0.39	0.26
66856-107013IFDRG	10	Gold-Plated SST	1kV	5	2.75"CF	0.69	0.39	0.39
66856-197013IFDRG	19	Gold-Plated SST	1kV	5	2.75"CF	0.69	0.39	0.52
66856-327013IFDRG	32	Gold-Plated SST	1kV	5	2.75"CF	0.69	0.39	0.72
66856-417013AIFDRG	41	Gold-Plated SST	1kV	5	3.375"CF	0.69	0.39	0.84

KF (QF) Flange， Double-Ended



Part Number	#of Pins	Conductor Material	Voltage (DC)	Amps/Pin	Flange Size	Dimensions, (in.)		
						A	B	D
66857-037018AIFDRG	3	Gold-Plated SST	1kV	5	KF25	0.69	0.33	0.15
66857-067018BIFDRG	6	Gold-Plated SST	1kV	5	KF40	0.69	0.33	0.26
66857-107018BIFDRG	10	Gold-Plated SST	1kV	5	KF40	0.69	0.33	0.39
66857-197018BIFDRG	19	Gold-Plated SST	1kV	5	KF40	0.69	0.33	0.52
66857-327018BIFDRG	32	Gold-Plated SST	1kV	5	KF40	0.69	0.33	0.72
66857-417018CIFDRG	41	Gold-Plated SST	1kV	5	KF50	0.69	0.33	0.84

MPDT Sub D-Type

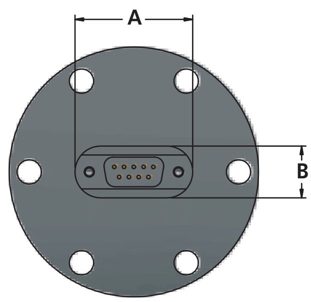
MPDT型多芯引线

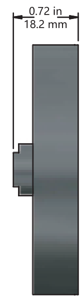
- Available in different pin densities, from 9- to 50-pin designs
- Vacuum-side connectors are made of PEEK (polyetheretherketone)
- 304L stainless steel shell offers corrosion-resistance and strength

Specifications

Number of Pins; 9-50
Max. Voltage (DC): 500 VDC
Max. Current (per pin): 5A
Conductor: Ni-Fe Alloy
Connector Insulator: PEEK
Connector Type: Push On
Vacuum Application: HV or UHV
Temperature Range:
Weld A dapter, CF: 77K to +300°C
KF, O-Ring, NPT: -40°Ct +150°C
Max. Ramp Rate: 25°C/minute
Air-Side Connector: 0°C to +35°C
Vac-Side Connector: 77K to +350°C

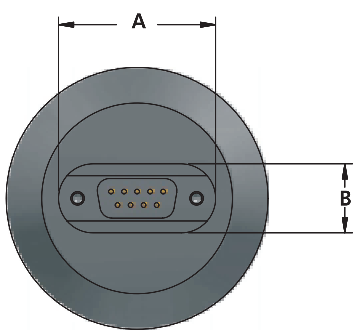
CF Flange

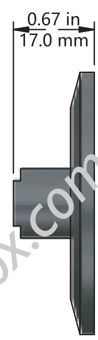




Part Number	Flange Size	#of Pin	Dimensions, (in.)	
			A	B
66858-091053IFDGG	2.75"CF	9	33.00	14.50
66858-151056IFDGG	4.5"CF	15	38.00	16.50
66858-251056IFDGG	4.5"CF	25	55.00	19.00
66858-251056XIFDGG	4.5"CF	50（2x25）	55.00	19.00
66858-371056AIFDGG	6"CF	37	70.00	19.00
66858-501056AIFDGG	6"CF	50	68.00	19.00

KF (QF)/ISO Flange





Part Number	Flange Size	#of Pin	Dimensions, (in.)	
			A	B
66859-091058BIFDGG	KF40	9	33.00	14.50
66859-151058CIFDGG	KF50	15	38.00	16.50
66859-251058DIFDGG	ISO63-K	25	55.00	19.00
66859-371058FIFDGG	ISO100-K	37	70.00	19.00
66859-501058FIFDGG	ISO100-K	50	68.00	19.00

Subminiature-C Multipin
微型C系列多针馈通

Multipin Heretic Feedthroughs:

- 9-pin configuration
- 250C high-temperature rated
- UHV compatible construction
- CF and QF flange mounts
- Kapton® insulated vacuum cables
- PEEK vacuum connectors
- Delrin® atmosphere connectors
- Custom versions available on request

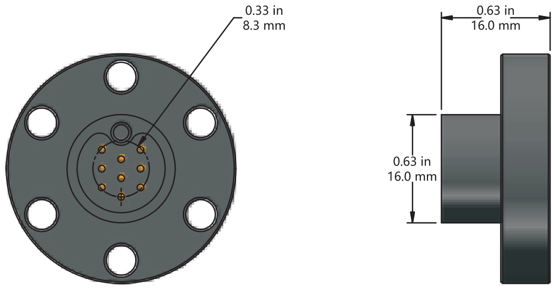
Specifications

Vacuum Application: UHV: 1×10^{-10} Torr; HV: 1×10^{-8} Torr
Maximum Current: 5A@ 20°C
Maximum Voltage: 300V

Temperature:
Feedthrough: 250°C
CF Flange: 450°C
KF Flange: 150°C
Connector, Air: 80°C
Connector, Vacuum; 250°C
Thermal Gradient: 25°C/ minute

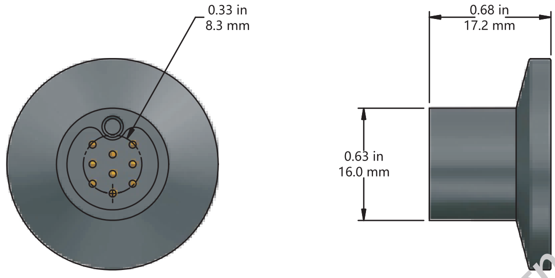
Materials:
Shell: Stainless Steel
Pins: Ni-Fe Alloy, Gold Plated
Seal & Insulatlon: Glass-Ceramic
Connector, Air: Delrin
Connector, Vacuum: PEEK

CF Flange



Part Number	Flange Size	#of Pin	Vac Side Configuration	Description
66860-091052IFDJG	1.33"CF	9	Gold-Plated Ni-Fe	9-Pin Feedthrough, 1.33" CF
66860-091052KIFDJG	1.33"CF	9	Gold-Plated Ni-Fe	9-Pin Feedthrough Kit, 1.33" CF*
66860-091053IFDJG	2.75"CF	9	Gold-Plated Ni-Fe	9-Pin Feedthrough, 2.75" CF
66860-181053IFDJG	2.75"CF	18（2x9-Pin）	Gold-Plated Ni-Fe	(2)x9-Pin Feedthrough, 2.75" CF

KF (QF) Flange

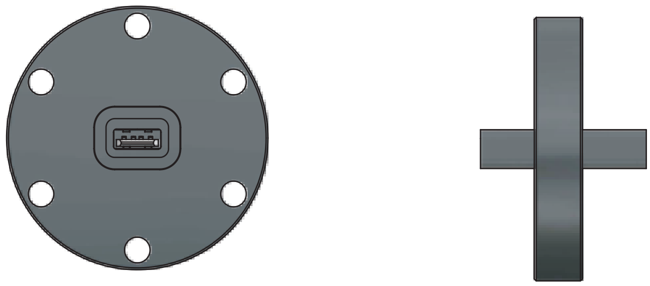


Part Number	Flange Size	#of Pin	Vac Side Configuration	Description
66861-091058IFDJG	KF16	9	Gold-Plated Ni-Fe	9-Pin Feedthrough, kF16
66861-091058KIFDJG	KF16	9	Gold-Plated Ni-Fe	9-Pin Feedthrough Kit, KF16*
66861-091058BIFDJG	KF40	9	Gold-Plated Ni-Fe	9-Pin Feedthrough,KF40
66861-181058BIFDJG	KF40	18（2x9-Pin）	Gold-Plated Ni-Fe	(2)x9-Pin Feedthrough,KF40

USB Feedthroughs
USB引线馈通

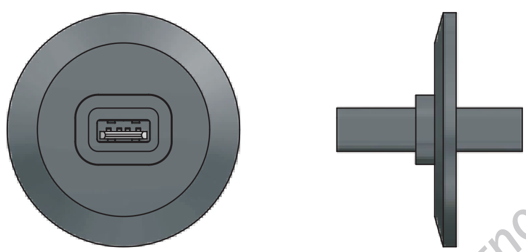
- Specifications Table
- Vacuum Application:HV or UHV
- Metal Seal Temperature Range:(Weld Adapter, CF)-269°C to 200°C
- Elastomer Seals Temperature Range (KF,O-Ring, NPT):-25°C to 200°C
- Grounded Shields Max. Voltage:30V RMS
- Leak Rate :≤ 2x10-10 CC/SEC He

CF Flange



Part Number	Flange Size	Voltage(V)	Current(A)	Atm Side Termination	VAC Side Termin Tion
66835-0120121TFTKG	1.33"CF	30	1	USB 2.0 Male	USB 2.0 Male
66835-012013ITFTKG	2.75"CF	30	1	USB 2.0 Male	USB 2.0 Male
66835-012013FITFTKG	2.75"CF	30	1	USB 2.0 Female	USB 2.0 Female
66835-012013FITFT3G	2.75"CF	30	1	USB 3.0 Female	USB 3.0 Female

KF (QF) Flange



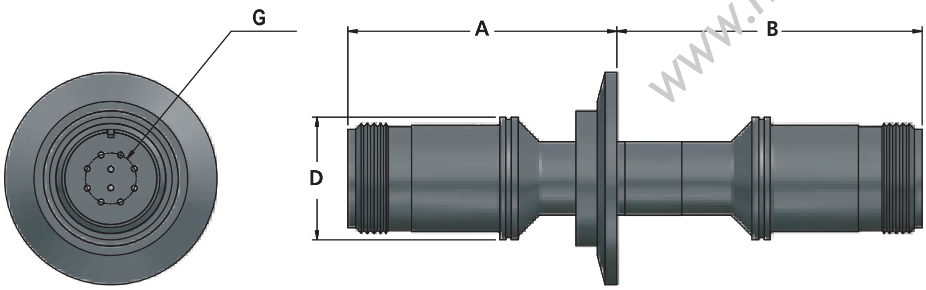
Part Number	Flange	Voltage(V)	Current(A)	ATM Side Termination	VAC Side Termin Tion
66904-012018BIFTKG	KF40	30	1	USB 2.0 Male	USB 2.0 Male
66904-012018BFIFTKG	KF40	30	1	USB 2.0 Female	USB 2.0 Female
66904-012018BFIFD3G	KF40	30	1	USB 3.0 Female	USB 3.0 Female

MS Multi-Pin

MS型多针馈通

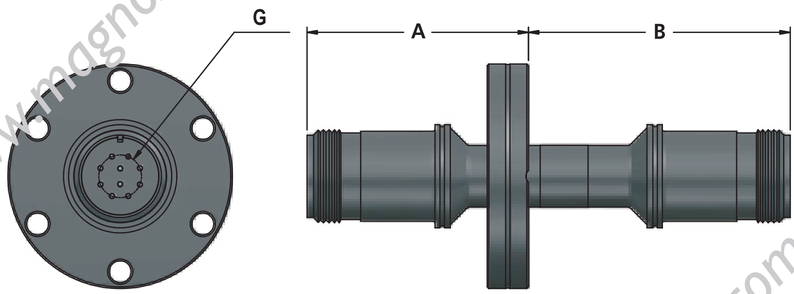
- Work with MS circular connectors--solid-shell, straight-threaded connectors with polarized key ways
- Silver-plated contacts have pre-tinned solder pockets
- Single-Ended version includes air-side connector (vacuum-side crimp connectors are available as accessories)
- Double-Ended version includes both air- and vacuum-side connector

KF (QF)/ISO Flange，Double-Ended



Part Number	#of Pins	Flange Size	Conductor Material	Voltage (DC)	Amps/Pin	Dimensions, (in.)			
						A	B	D	G
66865-045108BIFDAG	4	KF40	Alume®	700V	10	2.36	3.49	1.25	0.38
66865-045108CIFDAG	4	KF50	Alumel	700V	10	2.36	3.49	1.25	0.38
66865-065108BIFDAG	6	KF40	Alume	700V	10	2.36	3.49	1.25	0.44
66865-065108CIFDAG	6	KF50	Alumel	700V	10	2.36	3.49	1.25	0.44
66865-105108BIFDAG	10	KF40	Alume	700V	10	2.36	3.49	1.25	0.51
66865-105108CIFDAG	10	KF50	Alumel	700V	10	2.36	3.49	1.25	0.51
66865-205108DIFDAG	20	ISO63-K	Alumel	700V	10	2.78	3.50	1.75	1.03
66865-355108FI FDAG	35	ISO100-K	Alumel	700V	10	2.50	3.89	2.25	1.22

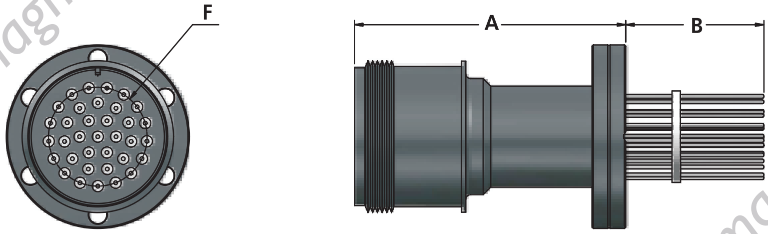
CF Flange，Double-Ended



Part Number	#of Pins	Flange Size	Conductor Material	Voltage (DC)	Amps/Pin	Dimensions, (in.)		
						A	B	G
66864-045103IFDAG	4	2.75"CF	Alume®	700V	10	2.36	3.49	0.38
66864-065103IFDAG	6	2.75"CF	Alumel	700V	10	2.36	3.49	0.44
66864-105103IFDAG	10	2.75"CF	Alume	700V	10	2.36	3.49	0.51
66864-205106IFDAG	20	4.5"CF	Alumel	700V	10	2.78	3.50	1.03
66864-355106IFDAG	35	4.5"CF	Alume	700V	10	2.50	3.89	1.22

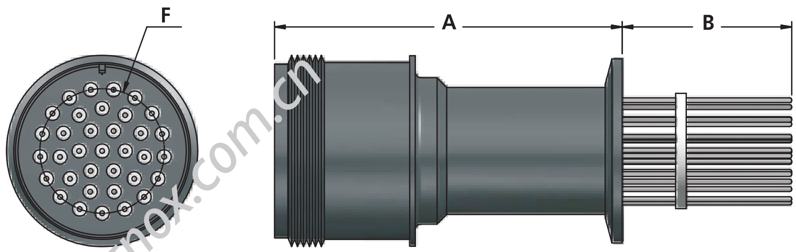
MAGNOX

CF Flange， Single-Ended



Part Number	#of Pins	Flange Size	Conductor Material	Voltage (DC)	Amps/Pin	Dimensions, (in.)		
						A	B	F
66862-045102IFTAG	4	1.33"CF	Alume®	700V	10	2.85	2.69	0.38
66862-045103IFTAG	4	2.75"CF	Alumel	700V	10	2.35	3.19	0.38
66862-065102IFTAG	6	1.33"CF	Alume	700V	10	2.85	2.69	0.44
66862-065103IFTAG	6	2.75"CF	Alumel	700V	10	2.35	3.19	0.44
66862-104102IFTAG	10	1.33"CF	Molybdenum	700V	10	2.85	2.69	0.51
66862-104103IFTAG	10	2.75"CF	Molybdenum	700V	10	2.35	3.19	0.51
66862-105102IFTAG	10	1.33"CF	Alumel	700V	10	2.85	2.69	0.51
66862-105103IFTAG	10	2.75"CF	Alumel	700V	10	2.35	3.19	0.51
66862-204103IFTAG	20	2.75"CF	Molybdenum	700V	10	2.53	3.50	1.03
66862-205103IFTAG	20	2.75"CF	Alumel	700V	10	2.53	3.50	1.03
66862-355103IFTAG	35	2.75"CF	Alume	700V	10	3.98	2.10	1.22
66862-355106IFTAG	35	4.5"CF	Alumel	700V	10	3.98	2.10	1.22

(QF)Flange， Single-Ended



Part Number	#of Pins	Flange Size	Conductor Material	Voltage (DC)	Amps/Pin	Dimensions, (in.)		
						A	B	F
66863-045108IFTAG	4	KF16	Alume®	700V	10	2.35	3.19	0.38
66863-045108BIFTAG	4	KF40	Alumel	700V	10	2.35	3.19	0.38
66863-065108IFTAG	6	KF16	Alume	700V	10	2.35	3.19	0.44
66863-065108AIFTAG	6	KF25	Alumel	700V	10	2.35	3.19	0.44
66863-065108BIFTAG	6	KF40	Alumel	700V	10	2.35	3.19	0.44
66863-104108IFTAG	10	KF16	Molybdenum	700V	10	2.35	3.19	0.51
66863-104108AIFTAG	10	KF25	Molybdenum	700V	10	2.35	3.19	0.51
66863-104108BIFTAG	10	KF40	Molybdenum	700V	10	2.35	3.19	0.51
66863-104108CIFTAG	10	KF50	Molybdenum	700V	10	2.35	3.19	0.51
66863-105108IFTAG	10	KF16	Alumel	700V	10	2.35	3.19	0.51
66863-105108AIFTAG	10	KF25	Alumel	700V	10	2.35	3.19	0.51
66863-105108BIFTAG	10	KF40	Alumel	700V	10	2.35	3.19	0.51
66863-105108CIFTAG	10	KF50	Alumel	700V	10	2.35	3.19	0.51
66863-204108BIFTAG	20	KF40	Molybdenum	700V	10	2.53	3.50	1.03
66863-204108CIFTAG	20	KF50	Molybdenum	700V	10	2.53	3.50	1.03
66863-205108BIFTAG	20	KF40	Alumel	700V	10	2.53	3.50	1.03
66863-205108CIFTAG	20	KF50	Alumel	700V	10	2.53	3.50	1.03
66863-355108BIFTAG	35	KF40	Alume	700V	10	3.98	2.10	6.33
66863-355108CIFTAG	35	KF50	Alumel	700V	10	3.98	2.10	6.33

MAGNOX

MPT Multi-Pin

MPT型多针馈通

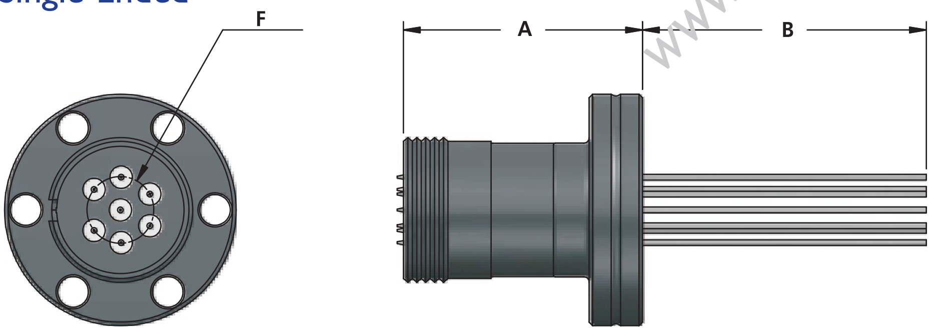
- Available with 3, 5, or 7 nickel-clad molybdenum pins, and weldable terinations, CF flanges, or KF flanges
- Includes one air-side connector (vacuum-side crimp connectors are available as accessories)

Number of Pins: 3–7 Max.
Voltage (DC): 500 VDC Max.
Current (per Pin): 3.5A
Conductor: Molybdenum

F/T Insulator: Alumina
Connector Insulator: Plastic
Connector Type: Screw Thread
Vacuum Application: HV or UHV

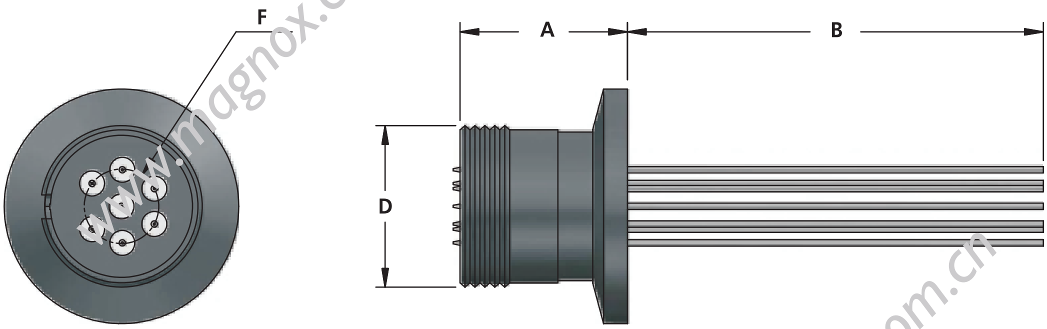
Temperature Range:
Weld Adapter, CF: Ambient to +450° C
KF, O-Ring, NPT: -40° C to +150° C
Max. Ramp Rate: 25° C/minute
Air-Side Connector: 0° C to +35° C

CF Flange，Single-Ended



Part Number	#of Pins	Flange Size	Vac. Side	Voltage (DC)	Amps/Pin	Dimensions, (in.)		
						A	B	F
66866-0340321FTAG	3	1.33"CF	Molybdenum	500V	3.5	0.97	2.01	0.25
66866-0340331FTAG	3	2.75"CF	Molybdenum	500V	3.5	0.97	2.01	0.25
66866-0540321FTAG	5	1.33"CF	Molybdenum	500V	3.5	1.34	1.58	0.38
66866-0540331FTAG	5	2.75"CF	Molybdenum	500V	3.5	0.84	2.08	0.38
66866-0740321FTAG	7	1.33"CF	Molybdenum	500V	3.5	1.34	1.58	0.38
66866-0740331FTAG	7	2.75"CF	Molybdenum	500V	3.5	0.84	2.08	0.38

KF (QF)Flange，Single-Ended



Part Number	#of Pins	Flange Size	Vac. Side	Voltage (DC)	Amps/Pin	Dimensions, (in.)		
						A	B	F
66867-0340381FTAG	3	KF16	Molybdenum	500V	3.5	0.97	2.01	0.25
66867-034038BIFTAG	3	KF40	Molybdenum	500V	3.5	0.97	2.01	0.25
66867-0540381FTAG	5	KF16	Molybdenum	500V	3.5	0.84	2.08	0.38
66867-054038AIFTAG	5	KF25	Molybdenum	500V	3.5	0.84	2.08	0.38
66867-054038BIFTAG	5	KF40	Molybdenum	500V	3.5	0.84	2.08	0.38
66867-054038CIFTAG	3	KF50	Molybdenum	500V	3.5	0.84	2.08	0.38
66867-0740381FTAG	7	KF16	Molybdenum	500V	3.5	0.84	2.08	0.38
66867-074038AIFTAG	7	KF25	Molybdenum	500V	3.5	0.84	2.08	0.38
66867-074038BIFTAG	7	KF40	Molybdenum	500V	3.5	0.84	2.08	0.38
66867-074038CIFTAG	7	KF50	Molybdenum	500V	3.5	0.84	2.08	0.38

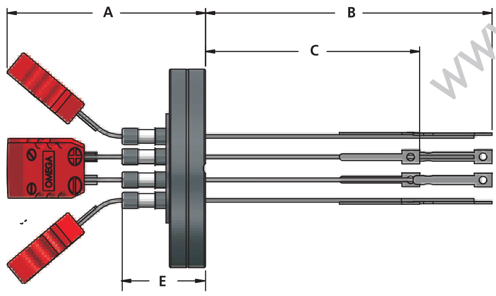
MAGNOX

Type C Mini Plug

C 型热电偶引线

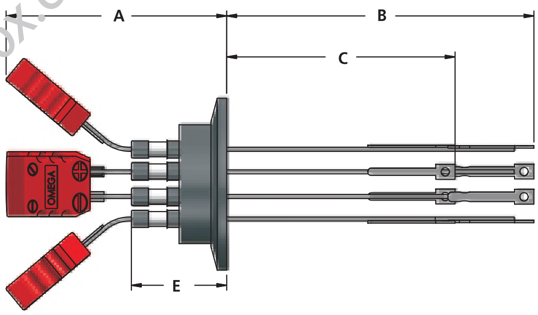
- Feature positive wires made of Tungsten/5% Rhenium and negative wires of Tungsten/26% Rhenium
- Temperature range between 0°C and 2,315°C
- Can be used with refactory-metal thermocouples
- Rated for use in high and ultrahigh vacuum applications
- Include air-side connectors
- Vacuum side leads terminate in thermocouple lugs, which include a stainless steel nut and screw to facilitate thermocouple hookup

CF Flange



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66868-00002TFT1CY	Miniature Plug	Nut/Bolt	1.33"CF	1	1.81	4.00	3.00	1.08
66868-00003TFT1CY	Miniature Plug	Nut/Bolt	2.75"CF	1	1.31	4.50	3.50	0.58
66868-00002TFT2CY	Miniature Plug	Nut/Bolt	1.33"CF	2	2.61	4.00	3.00	1.88
66868-00003TFT2CY	Miniature Plug	Nut/Bolt	2.75"CF	2	2.11	4.50	3.50	1.38
66868-00002TFT3CY	Miniature Plug	Nut/Bolt	1.33"CF	3	2.76	4.00	3.00	2.08
66868-00003TFT3CY	Miniature Plug	Nut/Bolt	2.75"CF	3	2.26	4.50	3.50	1.58
66868-00003TFT4CY	Miniature Plug	Nut/Bolt	2.75"CF	4	2.00	4.00	3.00	1.16
66868-00003TFT5CY	Miniature Plug	Nut/Bolt	2.75"CF	5	2.50	4.00	3.00	1.16

KF(QF) Flange



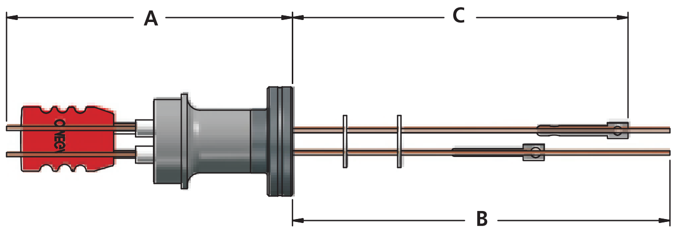
Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66869-00008TFT1CY	Miniature Plug	Nut/Bolt	KF16	1	1.31	4.50	3.50	0.58
6869-00008ATFT1CY	Miniature Plug	Nut/Bolt	KF25	1	1.31	4.50	3.50	0.58
66869-00008BTFT1CY	Miniature Plug	Nut/Bolt	KF40	1	1.31	4.50	3.50	0.58
66869-00008TFT2CY	Miniature Plug	Nut/Bolt	KF16	2	2.11	4.50	3.50	1.38
66869-00008ATFT2CY	Miniature Plug	Nut/Bolt	KF25	2	2.11	4.00	3.50	1.38
66869-00008BTFT2CY	Miniature Plug	Nut/Bolt	KF40	2	2.11	4.50	3.50	1.38
66869-00008TFT3CY	Miniature Plug	Nut/Bolt	KF16	3	2.26	4.50	3.50	1.58
66869-00008BTFT3CY	Miniature Plug	Nut/Bolt	KF40	3	2.26	4.50	3.50	1.58
66869-00008CTFT3CY	Miniature Plug	Nut/Bolt	KF50	3	2.26	4.50	3.50	1.58
66869-00008BTFT4CY	Miniature Plug	Nut/Bolt	KF40	4	2.00	4.00	3.00	1.16
66869-00008BTFT5CY	Miniature Plug	Nut/Bolt	KF40	5	2.50	4.00	3.00	1.16

Type C Mini Plug Plus Power

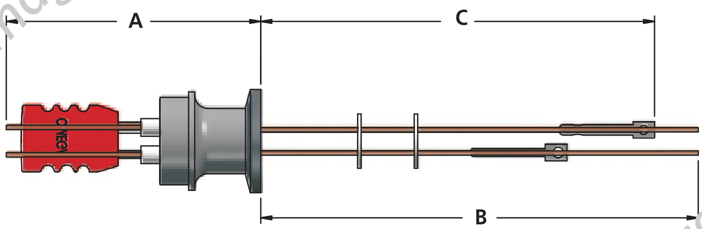
E型热电偶+电源引线

- Nickel or copper
- Rated to 5,000 volts and 30 amps
- Designed for use in high vacuum and UHV applications requiring both power and temperature measurements
- Minimize the number of dedicated vacuum ports ultimately required in a vacuum system
- Feature positive wires made of Tungsten/5% Rhenium and negative wires of Tungsten/26% Rhenium
- Temperature range between 0°C and 2.320°C
- Can be used with refactory-metal thermocouples
- Rated for use in high vacuum and UHV applications
- All assemblies are supplied with miniature air-side thermocouple connectors and vacuum-side thermocouple lugs with a #3-48 screw and nut

CF Flange



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Power Pins	Amps/ Pin	Dimensions, (in.)		
							A	B	C
66870-2C152TFT1CY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Cu	15	2.50	4.00	3.00
66870-2C153TFT1CY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Cu	15	2.00	4.50	3.50
66870-2C302TFT1CY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.094" Cu	30	2.85	3.86	2.86
66870-2C303TFT1CY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.094" Cu	30	2.35	4.36	3.36
66870-2N052TFT1CY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Ni	5	2.50	4.00	3.00
66870-2N053TFT1CY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Ni	5	2.00	4.50	3.50
66870-2N152TFT1CY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.094" Ni	15	2.85	3.86	2.86
66870-2N153TFT1CY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.094" Ni	15	2.35	4.36	3.36



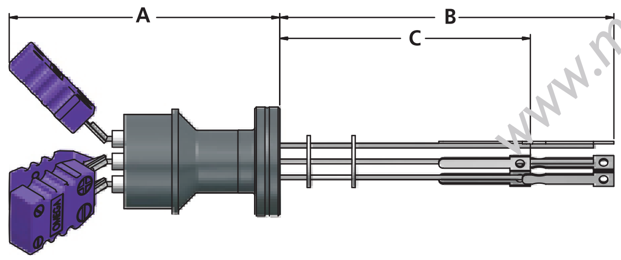
KF (QF)Flange

Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Power Pins	Amps/ Pin	Dimensions, (in.)		
							A	B	C
66871-2C158TFT1CY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.050" Cu	15	2.00	4.50	3.50
66871-2C158BTFT1CY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.050" Cu	15	2.00	4.50	3.50
66871-2C308TFT1CY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.094" Cu	30	2.35	4.36	3.36
66871-2C308BTFT1CY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.094" Cu	30	2.35	4.36	3.36
66871-2N058TFT1CY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.050" Ni	5	2.00	4.50	3.50
66871-2N058BTFT1CY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.050" Ni	5	2.00	4.50	3.50
66871-2N158TFT1CY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.094" Ni	15	2.35	4.36	3.36
66871-2N158BTFT1CY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.094" Ni	15	2.35	4.36	3.36

Type E Mini Plug
E型热电偶引线

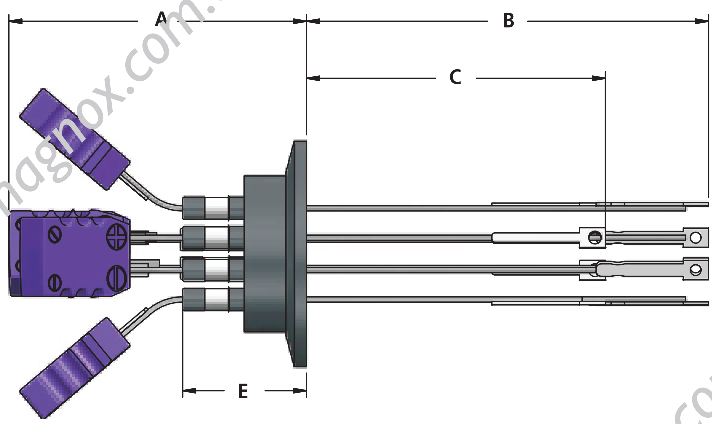
- Available in 1, 2, 3, 4, and 5 pairs
- Positive wires are made of Chromel® and the negative wires are made of Constantan
- Temperature range of -200°C to +900°C

CF Flange，Single-Ended



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	D
66872-00002TFT1EY	Miniature Plug	Nut/Bolt	1.33"CF	1	1.81	4.00	3.00	1.33
66872-00003TFT1EY	Miniature Plug	Nut/Bolt	2.75"CF	1	1.31	4.50	3.50	2.75
66872-00002TFT2EY	Miniature Plug	Nut/Bolt	1.33"CF	2	2.61	4.00	3.00	1.33
66872-00003TFT2EY	Miniature Plug	Nut/Bolt	2.75"CF	2	2.11	4.50	3.50	2.75
66872-00002TFT3EY	Miniature Plug	Nut/Bolt	1.33"CF	3	2.76	4.00	3.00	1.33
66872-00003TFT3EY	Miniature Plug	Nut/Bolt	2.75"CF	3	2.26	4.50	3.50	2.75
66872-00003TFT4EY	Miniature Plug	Nut/Bolt	2.75"CF	4	2.00	4.00	3.00	2.75
66872-00003TFT5EY	Miniature Plug	Nut/Bolt	2.75"CF	5	2.50	4.00	3.00	2.75

KF (QF)Flange，Single-Ended



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66873-00008TFT1EY	Miniature Plug	Nut/Bolt	KF16	1	1.31	4.50	3.50	0.58
66873-00008BTFT1EY	Miniature Plug	Nut/Bolt	KF40	1	1.31	4.50	3.50	0.58
66873-00008TFT2EY	Miniature Plug	Nut/Bolt	KF16	2	2.11	4.50	3.50	1.38
66873-00008BTFT2EY	Miniature Plug	Nut/Bolt	KF40	2	2.11	4.50	3.50	1.38
66873-00008TFT3EY	Miniature Plug	Nut/Bolt	KF16	3	2.26	4.50	3.50	1.58
66873-00008BTFT3EY	Miniature Plug	Nut/Bolt	KF40	3	2.26	4.50	3.50	1.58
66873-00008BTFT4EY	Miniature Plug	Nut/Bolt	KF40	4	2.00	4.00	3.00	1.16
66873-00008BTFT5EY	Miniature Plug	Nut/Bolt	KF40	5	2.50	4.00	3.00	1.16

Type E Mini Plug Plus Power

E型热电偶+电源引线

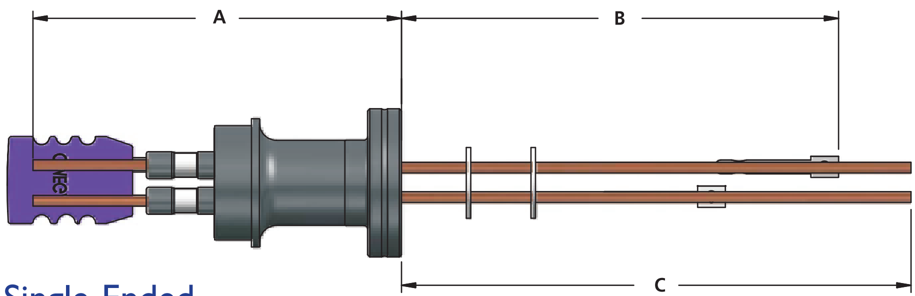
Type E Thermocouple/Power Feedthroughs:

- Two nickel or copper power conductors
- Rated to 5,000 volts and 30 amps
- Use in high vacuum and UHV applications requiring both power and temperature measurements
- Minimizes the number of dedicated vacuum ports required in vacuum systems

Type E Feedthroughs:

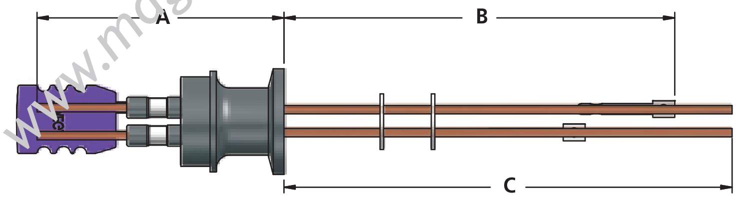
- Constructed of vacuum-grade materials, including OFHC copper or nickel conductor pins, high-purity alumina ceramic insulation, 304 stainless steel mounts, and vacuum-tube-grade braze alloys
- Positive wires made of Chromel® and negative wires made of Constantan
- Temperature range of -200° C to +900° C
- Assemblies supplied with miniature air-side thermocouple connectors and vacuum-side thermocouple lugs with a #3–48 screw and nut

NOTE: Power leads are not supplied with connectors. Must be purchased separately



CF Flanged， Single-Ended

Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Power Pins	Amps/ Pin	Dimensions, (in.)		
							A	B	C
66874-2G152TFT1EY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Cu	15	2.64	4.00	3.00
66874-2C153TFT1EY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Cu	15	2.14	4.50	3.50
66874-2C302TFT1EY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.094" Cu	30	2.85	4.00	3.00
66874-2C303TFT1EY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.094" Cu	30	2.35	4.50	3.50
66874-2N052TFT1EY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Ni	5	2.64	4.00	3.00
66874-2N053TFT1EY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Ni	5	2.14	4.50	3.50
66874-2N152TFT1EY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.092" Ni	15	2.85	4.00	3.00
66874-2N153TFT1EY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.092" Ni	15	2.35	4.50	3.50



KF (QF)Flange， Single-Ended

Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Shield	Amps/ Pin	Dimensions, (in.)		
							A	B	C
66875-2C158TFT1EY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.050" Cu	15	2.14	4.50	3.50
66875-2C158BTFT1EY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.050" Cu	15	2.14	4.50	3.50
66875-2C308TFT1EY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.094" Cu	30	2.35	4.36	3.36
66875-2C308BTFT1EY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.094" Cu	30	2.35	4.36	3.36
66875-2N058TFT1EY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.050" Ni	5	2.14	4.50	3.50
66875-2N058BTFT1EY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.050" Ni	5	2.14	4.50	3.50
66875-2N158TFT1EY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.092" Ni	15	2.35	4.36	3.36
66875-2N158BTFT1EY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.092" Ni	15	2.35	4.36	3.36

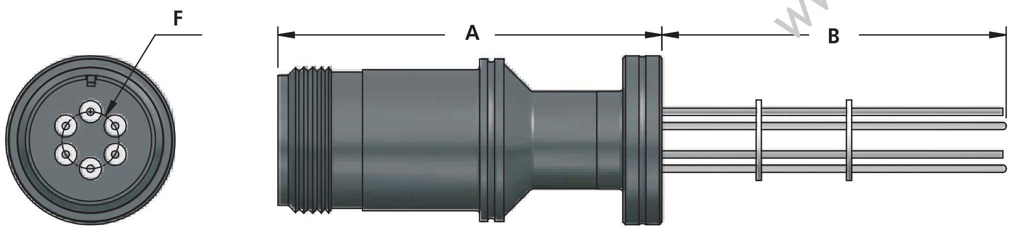
Type E Push-On

E型热电偶引推入式插头

Type E T/C Screw-On

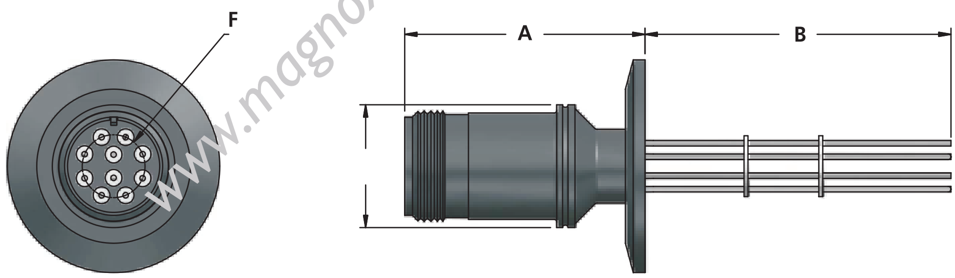
- Individual push-on connectors
- Available in 2, 3, 5, and 10 pairs
- Positive wires are made of Chromel® and the negative wires are made of Constantan
- Temperature range of -200°C to +900°C

CF Flange，Single-Ended



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	F
66876-00002TFT2EA	Mil-Spec Plug	Pins	1.33"CF	2	2.85	2.70	0.38
66876-00003TFT2EA	Mil-Spec Plug	Pins	2.75"CF	2	2.35	3.20	0.38
66876-00002TFT3EA	Mil-Spec Plug	Pins	1.33"CF	3	2.85	2.70	0.44
66876-00003TFT3EA	Mil-Spec Plug	Pins	2.75"CF	3	2.35	3.20	0.44
66876-00002TFT5EA	Mil-Spec Plug	Pins	1.33"CF	5	2.85	2.70	0.51
66876-00003TFT5EA	Mil-Spec Plug	Pins	2.75"CF	5	2.35	3.20	0.51
66876-00003TFTVEA	Mil-Spec Plug	Pins	2.75"CF	10	2.53	3.50	1.03

KF (QF)Flange，Single-Ended



Pare Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	F
66877-00008TFT2EA	Mil-Spec Plug	Pins	KF16	2	2.35	2.20	0.38
66877-00008BTFT2EA	Mil-Spec Plug	Pins	KF40	2	2.35	3.20	0.38
66877-00008TFT3EA	Mil-Spec Plug	Pins	KF16	3	2.35	2.20	0.44
66877-00008BTFT3EA	Mil-Spec Plug	Pins	KF40	3	2.35	3.20	0.44
66877-00008TFT5EA	Mil-Spec Plug	Pins	KF16	5	2.35	2.20	0.51
66877-00008BTFT5EA	Mil-Spec Plug	Pins	KF40	5	2.35	3.20	0.51
66877-00008BTFTVEA	Mil-Spec Plug	Pins	KF40	10	2.53	3.50	1.03

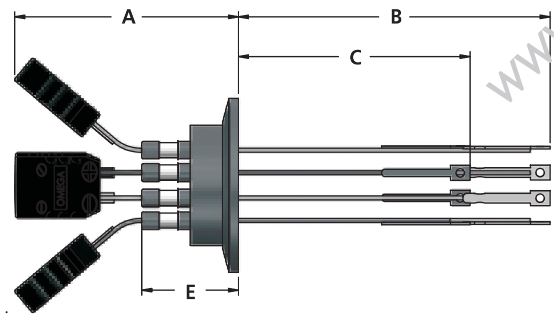
Thermocouple Feedthroughs

Type J Mini Plug

J型热电偶引线

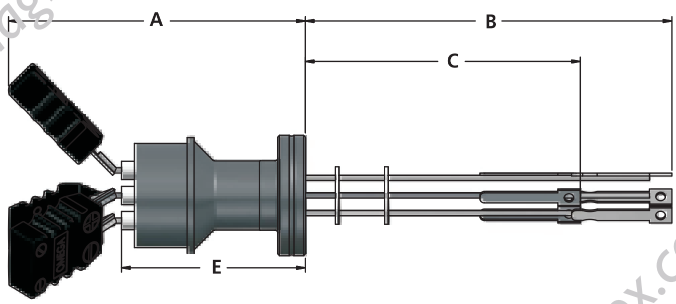
- Available in 1, 2, 3, 4, and 5 pairs
- Temperature range from 0°C to 750°C
- Include air-side connectors
- Designed for use in high vacuum and UHV applications
- Feature positive wires made of iron and negative wires of Constantan
- Vacuum-side leads terminate in thermocouple lugs, which include a stainless steel nut and screw to facilitate thermocouple hookup

KF (QF)Flange， Single-Ended



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66878-00008TFT1JY	Miniature Plug	Nut/Bolt	KF16	1	1.31	4.50	3.50	0.58
66878-00008ATFT1JY	Miniature Plug	Nut/Bolt	KF25	1	1.31	4.50	3.50	0.58
66878-00008BTFT1JY	Miniature Plug	Nut/Bolt	KF40	1	1.31	4.50	3.50	0.58
66878-00008TFT2JY	Miniature Plug	Nut/Bolt	KF16	2	2.11	4.50	3.50	1.38
66878-00008ATFT2JY	Miniature Plug	Nut/Bolt	KF25	2	2.11	4.50	3.50	1.38
66878-00008BTFT2JY	Miniature Plug	Nut/Bolt	KF40	2	2.11	4.50	3.50	1.38
66878-00008TFT3JY	Miniature Plug	Nut/Bolt	KF16	3	2.26	4.50	3.50	1.58
66878-00008BTFT3JY	Miniature Plug	Nut/Bolt	KF40	3	2.26	4.50	3.50	1.58
66878-00008BTFT4JY	Miniature Plug	Nut/Bolt	KF40	4	2.00	4.00	3.00	1.16
66878-00008BTFT5JY	Miniature Plug	Nut/Bolt	KF40	5	2.50	4.00	3.00	1.16

CF Flange， Single-Ended



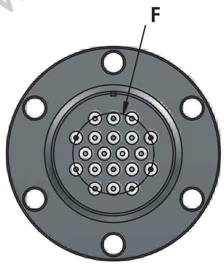
Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66879-00002TFT1JY	Miniature Plug	Nut/Bolt	1.33"CF	1	1.81	4.00	3.00	1.08
66879-00003TFT1JY	Miniature Plug	Nut/Bolt	2.75"CF	1	1.31	4.50	3.50	0.58
66879-00002TFT2JY	Miniature Plug	Nut/Bolt	1.33"CF	2	2.61	4.00	3.00	1.88
66879-00003TFT2JY	Miniature Plug	Nut/Bolt	2.75"CF	2	2.11	4.50	3.50	1.38
66879-00002TFT3JY	Miniature Plug	Nut/Bolt	1.33"CF	3	2.76	4.00	3.00	2.08
66879-00003TFT3JY	Miniature Plug	Nut/Bolt	2.75"CF	3	2.26	4.50	3.50	1.58
66879-00003TFT4JY	Miniature Plug	Nut/Bolt	1.33"CF	4	2.00	4.00	3.00	1.16
66879-00003TFT5JY	Miniature Plug	Nut/Bolt	2.75"CF	5	2.50	4.00	3.00	1.16

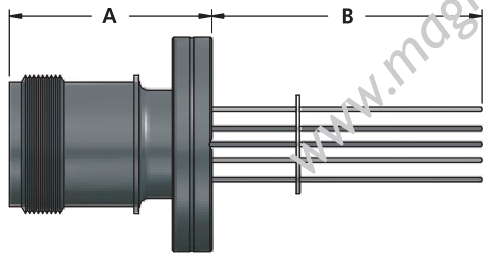
Thermocouple Feedthroughs

Type J Mil-Spec Plug

J型热电偶Mil–Spec标准插头

CF Flange，Single-Ended

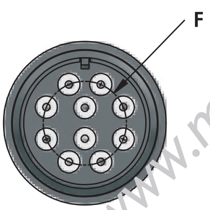


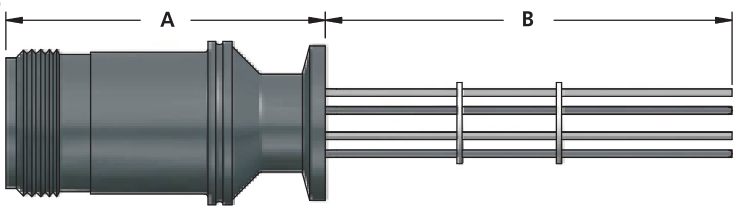


Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	F
66880-00002TFT2JA	Mil-Spec Plug	Pins	1.33"CF	2	2.85	2.70	0.38
66880-00003TFT2JA	Mil-Spec Plug	Pins	2.75"CF	2	2.35	3.20	0.38
66880-00002TFT3JA	Mil-Spec Plug	Pins	1.33"CF	3	2.85	2.70	0.44
66880-00003TFT3JA	Mil-Spec Plug	Pins	2.75"CF	3	2.35	3.20	0.44
66880-00002TFT5JA	Mil-Spec Plug	Pins	1.33"CF	5	2.85	2.70	0.51
66880-00003TFT5JA	Mil-Spec Plug	Pins	2.75"CF	5	2.35	3.20	0.51
66880-00003TFTVJA	Mil-Spec Plug	Pins	2.75"CF	10	2.53	3.50	1.03

KF (QF)Flange，Single-Ended

- Available in 1, 2, 3, 5, and 10 pairs





Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	F
66881-00008TFT2JA	Mil-Spec Plug	Pins	KF16	2	2.35	3.20	0.38
66881-00008BTFT2JA	Mil-Spec Plug	Pins	KF40	2	2.35	3.20	0.38
66881-00008TFT3JA	Mil-Spec Plug	Pins	KF16	3	2.35	3.20	0.44
66881-00008BTFT3JA	Mil-Spec Plug	Pins	KF40	3	2.35	3.20	0.44
66881-00008TFT5JA	Mil-Spec Plug	Pins	KF16	5	2.35	3.20	0.51
66881-000088TFT5JA	Mil-Spec Plug	Pins	KF40	5	2.35	3.20	0.51
66881-00008BTFTVJA	Mil-Spec Plug	Pins	KF40	10	2.53	3.50	1.03

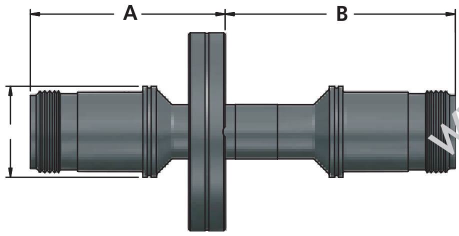
MAGNOX

Type J Mil-Spec Plug

K型热电偶+电源引线

CF Flange, Double-Ended

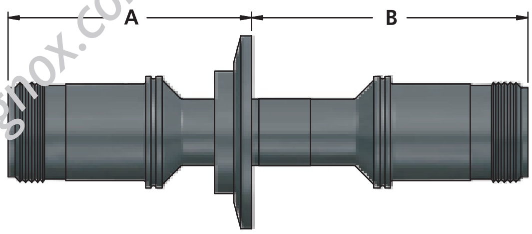
- Available in 1, 2, 3, 5, and 10 pairs



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)	
					A	B
66886-00003TFD2JA	Mil-Spec Plug	Mil-Spec Plug	2.75"CF	2	2.34	3.69
66886-00003TFD3JA	Mil-Spec Plug	Mil-Spec Plug	2.75"CF	3	2.34	3.69
66886-00003TFD5JA	Mil-Spec Plug	Mil-Spec Plug	2.75"CF	5	2.34	3.69
66886-00006TFDVJA	Mil-Spec Plug	Mil-Spec Plug	4.50"CF	10	2.78	3.50

KF（QF）Flange，Double-Ended

- Available in 1, 2, 3, 5, and 10 pairs



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)	
					A	B
66887-00008BTFD2JA	Mil-Spec Plug	Mil-Spec Plug	KF40	2	2.34	3.69
66887-00008CTFD2JA	Mil-Spec Plug	Mil-Spec Plug	KF50	2	2.34	3.69
66887-00008BTFD3JA	Mil-Spec Plug	Mil-Spec Plug	KF40	3	2.34	3.69
66887-00008CTFD3JA	Mil-Spec Plug	Mil-Spec Plug	KF50	3	2.34	3.69
66887-000088TFD5JA	Mil-Spec Plug	Mil-Spec Plug	KF40	5	2.34	3.69
66887-00008CTFD5JA	Mil-Spec Plug	Mil-Spec Plug	KF50	5	2.34	3.69
66887-00008DTFDVJA	Mil-Spec Plug	Mil-Spec Plug	ISO63	10	2.78	3.50

MAGNOX

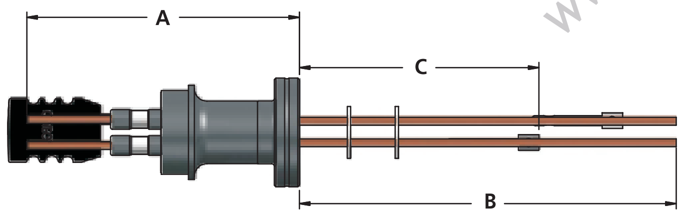
Type J Mini Plug Plus Power

J型热电偶+电源引线

- Nickel or copper power conductors
- Temperature range from 0°C to 750°C.
- Use in high vacuum and UHV applications requiring both power and temperature. measurerents
- Rated to 5,000 volts and 30 amps
- Feature positive wires made of iron and negative wires made of Constantane

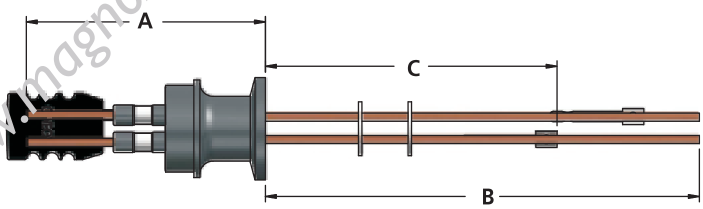
NOTE: Power leads are not supplied with connecfors. Must be purchased separately

CF Flange，Single-Ended



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Shield	Amps/ Pin	Dimensions, (in.)		
							A	B	C
66884-2C152TFT1JY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Cu	15	2.50	4.00	3.00
66884-2C153TFT1JY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Cu	15	2.00	4.50	3.50
66884-2C302TFT1JY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.094" Cu	30	2.50	4.00	3.00
66884-2C303TFT1JY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.094" Cu	30	2.00	4.50	3.50
66884-2N052TFT1JY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Ni	5	2.50	4.00	3.00
66884-2N053TFT1JY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Ni	5	2.00	4.50	3.50
66884-2N152TFT1JY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.094" Ni	15	2.85	4.86	3.86
66884-2N153TFT1JY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.094" Ni	15	2.35	4.36	3.36

KF(QF) Flange，Single-Ended



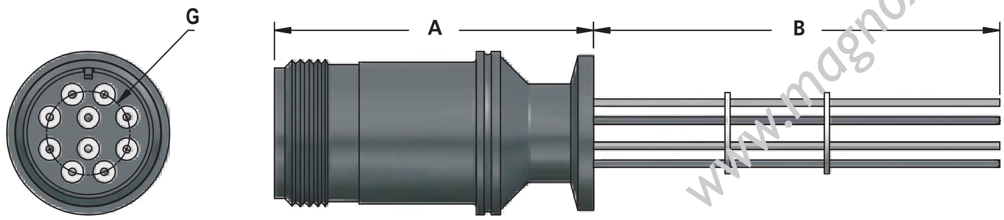
Part Number	Air Side	Vac. Side	Flange Size	Pairs	Shield	Amps/ Pin	Dimensions, (in.)		
							A	B	C
66885-2C158TFT1JY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.050" Cu	15	2.00	4.50	3.50
66885-2C158ATFT1JY	Miniature Plug	Nut/Bolt	KF25	1	(2) 0.050" Cu	15	2.00	4.50	3.50
66885-2C158BTFT1JY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.050" Cu	15	2.00	4.50	3.50
66885-2C308TFT1JY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.094" Cu	30	2.00	4.50	3.50
66885-2C308BTFT1JY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.094" Cu	30	2.00	4.50	3.50
66885-2N058TFT1JY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.050" Ni	5	2.00	4.50	3.50
66885-2N058BTFT1JY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.050" Ni	5	2.00	4.50	3.50
66885-2N158TFT1JY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.094" Ni	15	2.35	4.36	3.36
66885-2N158BTFT1JY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.094" Ni	15	2.35	4.36	3.36

Thermocouple Feedthroughs

Type J Push-On

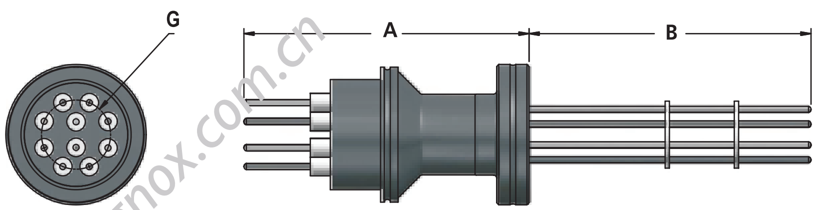
CF Flanged

CF Flange

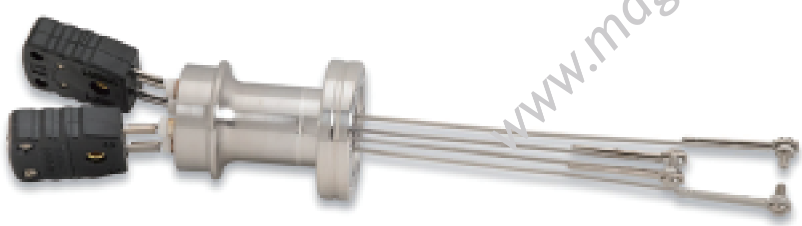


Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	G
66882-00002TFT2JP	Pins	Pins	1.33"CF	2	2.55	2.70	0.38
66882-00003TFT2JP	Pins	Pins	2.75"CF	2	2.05	3.20	0.38
66882-00002TFT3JP	Pins	Pins	1.33"CF	3	2.55	2.70	0.44
66882-00003TFT3JP	Pins	Pins	2.75"CF	3	2.05	3.20	0.44
66882-00002TFT5JP	Pins	Pins	1.33"CF	5	2.55	2.70	0.51
66882-00003TFT5JP	Pins	Pins	2.75"CF	5	2.05	3.20	0.51

KF (QF)Flange



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	G
66883-00008TFT2JP	Pins	Pins	KF16	2	2.05	3.20	0.38
66883-00008BTFT2JP	Pins	Pins	KF40	2	2.05	3.20	0.38
66883-00008TFT3JP	Pins	Pins	KF16	3	2.05	3.20	0.44
66883-00008BTFT3JP	Pins	Pins	KF40	3	2.05	3.20	0.44
66883-00008TFT5JP	Pins	Pins	KF16	5	2.05	3.20	0.51
66883-00008BTFT5JP	Pins	Pins	KF40	5	2.05	3.20	0.51



MAGNOX

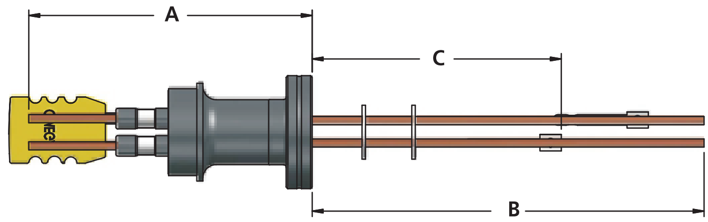
Type K Mini Plug Plus Power

K型热电偶+电源引线

- Two nickel or copper power conductors
- Rated to 5,000 volts and 30 lamps
- Designed for use in high vacuum and UHV applications requiring both power and temperature measurements
- Feature positive wires made of Chromel® and negative wires made of Alumel®
- Temperature range from -200°C to 1,250°C
- Assemblies supplied with miniature air-side thermocouple connectors and vacuum-side thermocouple lugs with a #3-48 screw and nut

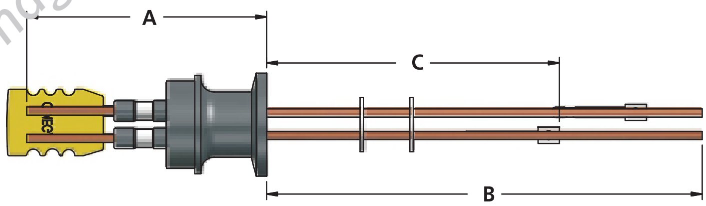
NOTE: Power leads are not supplied with connectors. Must be purchased seperataly

CF Flange，Single-Ended



Part Number	Air Side	Vac. Side	Flange Size	Pairs	Shield	Amps/ Pin	Dimensions, (in.)		
							A	B	C
66888-2C152TFTIKY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Cu	15	2.64	4.00	3.00
66888-2C153TFTIKY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Cu	15	2.14	4.50	3.50
66888-2C302TFTIKY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Cu	30	2.85	3.86	2.86
66888-2C303TFTIKY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Cu	30	2.35	4.36	3.36
66888-2N052TFTIKY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Cu	5	2.64	4.00	3.00
66888-2N053TFTIKY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Cu	5	2.14	4.50	3.50
66888-2N152TFTIKY	Miniature Plug	Nut/Bolt	1.33"CF	1	(2) 0.050" Cu	15	2.85	3.86	2.86
66888-2N153TFTIKY	Miniature Plug	Nut/Bolt	2.75"CF	1	(2) 0.050" Cu	15	2.35	4.36	3.36

KF(QF) Flange，Single-Ended



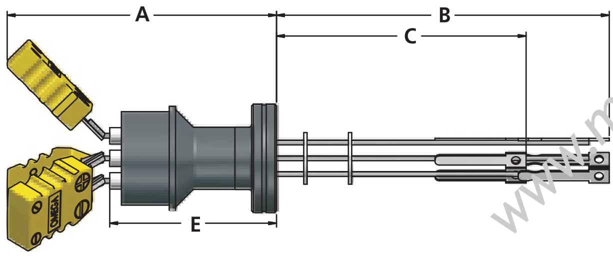
Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Shield	Amps/ Pin	Dimensions, (in.)		
							A	B	C
66889-2C158TFTIKY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.050" Cu	15	2.14	4.50	3.50
66889-2C158BTFTIKY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.050" Cu	15	2.14	4.50	3.50
66889-2C158CTFTIKY	Miniature Plug	Nut/Bolt	KF50	1	(2) 0.050" Cu	15	2.14	4.50	3.50
66889-2C308TFTIKY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.094" Cu	30	2.35	4.36	3.36
66889-2C308BTFTIKY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.094" Cu	30	2.35	4.36	3.36
66889-2C308CTFTIKY	Miniature Plug	Nut/Bolt	KF50	1	(2) 0.094" Cu	30	2.35	4.36	3.36
68889-2N058TFTIKY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.050" Ni	5	2.14	4.50	3.50
66889-2N058ATFTIKY	Miniature Plug	Nut/Bolt	KF25	1	(2) 0.050" Ni	5	2.14	4.50	3.50
66889-2N058BTFTIKY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.050" Ni	5	2.14	4.50	2.86
66889-2N158TFTIKY	Miniature Plug	Nut/Bolt	KF16	1	(2) 0.092" Ni	15	2.35	4.36	3.36
66889-2N158BTFTIKY	Miniature Plug	Nut/Bolt	KF40	1	(2) 0.092" Ni	15	2.35	4.36	3.36

MAGNOX

Type K Mini Plug
K型热电偶引线插头

CF Flange， Single-Ended

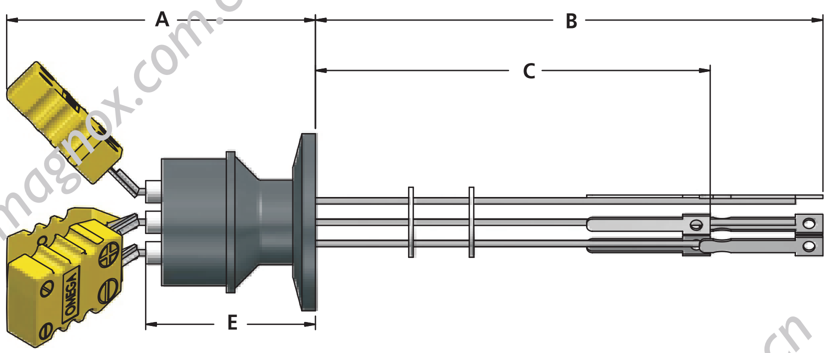
◆ Available in 1, 2, 3, 5, and 5 pairs



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66891-00002TFT1KY	Miniature Plug	Nut/Bolt	1.33"CF	1	1.81	4.00	3.00	1.08
66891-00003TFT1KY	Miniature Plug	Nut/Bolt	2.75"CF	1	1.31	4.50	3.50	0.58
66891-00003ATFT1KY	Miniature Plug	Nut/Bolt	3.375"CF	1	1.31	4.50	3.50	0.58
66891-00002TFT2KY	Miniature Plug	Nut/Bolt	1.33"CF	2	2.61	4.00	3.00	1.88
66891-00003TFT2KY	Miniature Plug	Nut/Bolt	2.75"CF	2	2.11	4.50	3.50	1.38
66891-00003ATFT2KY	Miniature Plug	Nut/Bolt	3.375"CF	2	2.11	4.50	3.50	1.38
66891-00002TFT3KY	Miniature Plug	Nut/Bolt	1.33"CF	3	2.76	4.00	3.00	2.08
66891-00003TFT3KY	Miniature Plug	Nut/Bolt	2.75"CF	3	2.26	4.50	3.50	1.58
66891-00003ATFT4KY	Miniature Plug	Nut/Bolt	2.75"CF	4	2.00	4.00	3.00	1.16
66891-00003ATFT5KY	Miniature Plug	Nut/Bolt	2.75"CF	5	2.50	4.00	3.00	1.16

KF(QF) Flange， Single-Ended

◆ Available in 1, 2, 3, 5, and 5 pairs



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66892-00008TFT1KY	Miniature Plug	Nut/Bolt	KF16	1	1.31	4.50	3.50	0.58
66892-00008ATFT1KY	Miniature Plug	Nut/Bolt	KF25	1	1.31	4.50	3.50	0.58
66892-00008BTFT1KY	Miniature Plug	Nut/Bolt	KF40	1	1.31	4.50	3.50	0.58
66892-00008TFT2KY	Miniature Plug	Nut/Bolt	KF16	2	2.11	4.50	3.50	1.38
66892-00008ATFT2KY	Miniature Plug	Nut/Bolt	KF25	2	2.11	4.50	3.50	1.38
66892-00008BTFT2KY	Miniature Plug	Nut/Bolt	KF40	2	2.11	4.50	3.50	1.38
66892-00008CTFT2KY	Miniature Plug	Nut/Bolt	KF50	2	2.11	4.50	3.50	1.38
66892-00008TFT3KY	Miniature Plug	Nut/Bolt	KF16	3	2.26	4.50	3.50	1.58
66892-00008ATFT3KY	Miniature Plug	Nut/Bolt	KF25	3	2.26	4.50	3.50	1.58
66892-00008BTFT3KY	Miniature Plug	Nut/Bolt	KF40	3	2.26	4.50	3.50	1.58
66892-00008BTFT4KY	Miniature Plug	Nut/Bolt	KF40	4	2.00	4.00	3.00	1.16
66892-00008BTFT5KY	Miniature Plug	Nut/Bolt	KF40	5	2.50	4.00	3.00	1.16

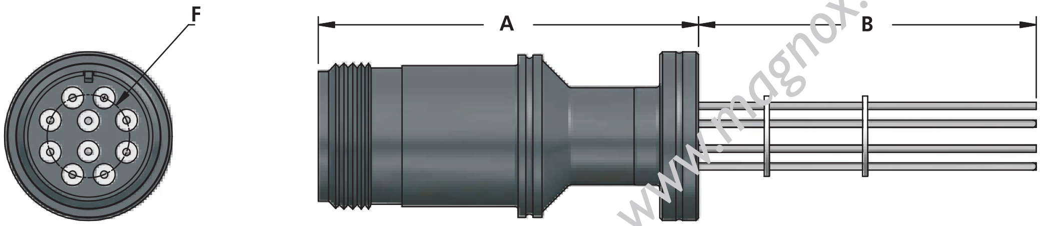
MAGNOX

Type K Mil-Spec Plug

K型热电偶Mil-Spec标准接头

CF Flange， Single-Ended

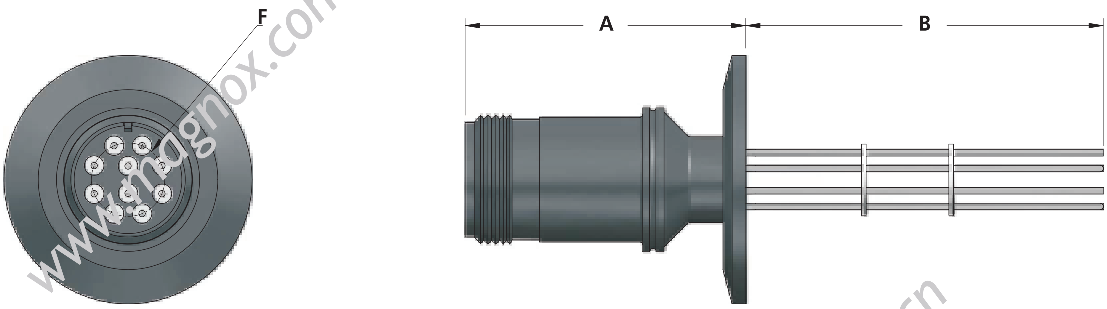
◆ Available in 2, 3, 5, and 10 pairs



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	F
66893-00002TFT2KA	Mil-Spec Plug	Pins	1.33"CF	2	2.85	2.70	0.38
66893-00003TFT2KA	Mil-Spec Plug	Pins	2.75"CF	2	2.35	3.20	0.38
66893-00002TFT3KA	Mil-Spec Plug	Pins	1.33"CF	3	2.85	2.70	0.44
66893-00003TFT3KA	Mil-Spec Plug	Pins	2.75"CF	3	2.35	3.20	0.44
66893-00002TFT5KA	Mil-Spec Plug	Pins	1.33"CF	5	2.85	2.70	0.51
66893-00003TFT5KA	Mil-Spec Plug	Pins	2.75"CF	5	2.35	3.20	0.51
66893-00003TFTVKA	Mil-Spec Plug	Pins	2.75"CF	10	2.53	3.50	1.03

KF(QF) Flange， Single-Ended

◆ Available in 2, 3, 5, and 10 pairs

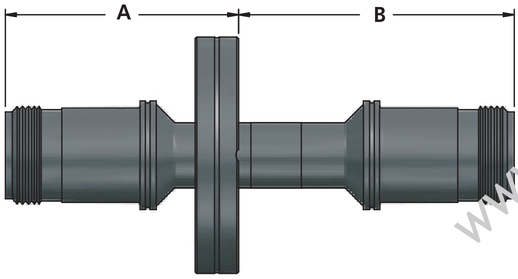


Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	F
66894-00008TFT2KA	Mil-Spec Plug	Pins	KF16	2	2.35	3.20	0.38
66894-00008BTFT2KA	Mil-Spec Plug	Pins	KF40	2	2.35	3.20	0.38
66894-00008TFT3KA	Mil-Spec Plug	Pins	KF16	3	2.35	3.20	0.43
66894-00008ATFT3KA	Mil-Spec Plug	Pins	KF25	3	2.35	3.20	0.43
66894-00008BTFT3KA	Mil-Spec Plug	Pins	KF40	3	2.35	3.20	0.43
66894-00008TFT5KA	Mil-Spec Plug	Pins	KF16	5	2.35	3.20	0.51
66894-00008ATFT5KA	Mil-Spec Plug	Pins	KF25	5	2.35	3.20	0.51
66894-00008BTFT5KA	Mil-Spec Plug	Pins	KF40	5	2.35	3.20	0.51
66894-00008BTFTVKA	Mil-Spec Plug	Pins	KF40	10	2.53	3.50	1.03
66894-00008CTFTVKA	Mil-Spec Plug	Pins	KF50	10	2.53	3.50	1.03

MAGNOX

CF Flange， Double-Ended

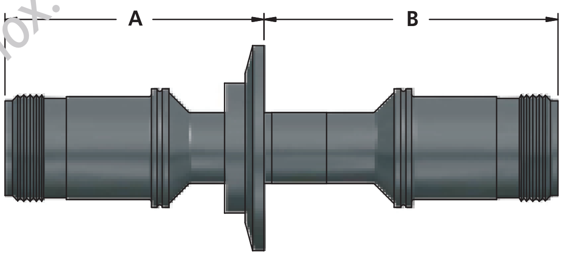
◆ Available in 2, 3, 5, and 10 pairs



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)	
					A	B
66896-00003TFD2KA	Mil-Spec Plug	Mil-Spec Plug	2.75"CF	2	2.34	3.69
66896-00003TFD3KA	Mil-Spec Plug	Mil-Spec Plug	2.75"CF	3	2.34	3.69
66896-00003TFD5KA	Mil-Spec Plug	Mil-Spec Plug	2.75"CF	5	2.34	3.69
66896-00006TFDVKA	Mil-Spec Plug	Mil-Spec Plug	4.5"CF	10	2.78	3.50

KF（QF）＆ISO Flange， Double-Ended

◆ Available in 2, 3, 5, and 10 pairs



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)	
					A	B
66897-00008BTFD2KA	Mil-Spec Plug	Mil-Spec Plug	KF40	2	2.34	3.69
66897-00008CTFD2KA	Mil-Spec Plug	Mil-Spec Plug	KF50	2	2.34	3.69
66897-00008BTFD3KA	Mil-Spec Plug	Mil-Spec Plug	KF40	3	2.34	3.69
66897-00008CTFD3KA	Mil-Spec Plug	Mil-Spec Plug	KF50	3	2.34	3.69
66897-00008BTFD5KA	Mil-Spec Plug	Mil-Spec Plug	KF40	5	2.34	3.69
66897-00008CTFD5KA	Mil-Spec Plug	Mil-Spec Plug	KF50	5	2.34	3.69
66897-00008DTFDVKA	Mil-Spec Plug	Mil-Spec Plug	ISO63	10	2.78	3.50

MAGNOX

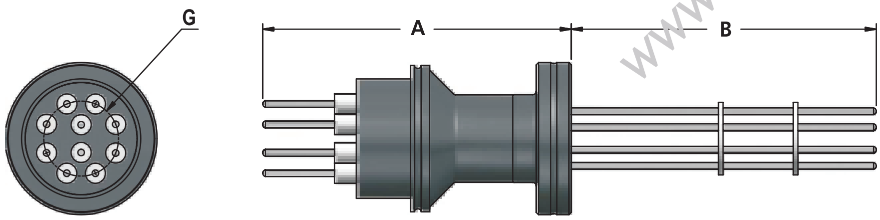
Type K Push-On

K型热电偶推入式引线

- Temperature range from -200° C to 1,250° C
- Designed for use in high vacuum and UHV applications
- Does not include connectors
- Feature positive wires made of Chromel and negative wires made of Alumel @

CF Flange， Single-Ended

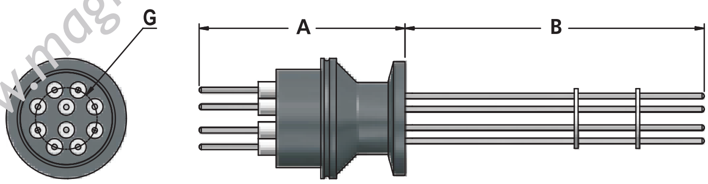
- Available in 1, 2, 3, and 5 pairs



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	G
66890-00002TFT2KP	Pins	Pins	1.33"CF	2	2.05	3.20	0.38
66890-00003TFT2KP	Pins	Pins	2.75"CF	2	2.05	3.20	0.38
66890-00002TFT3KP	Pins	Pins	1.33"CF	3	2.05	3.20	0.38
66890-00003TFT3KP	Pins	Pins	2.75"CF	3	2.05	3.20	0.38
66890-00002TFT5KP	Pins	Pins	1.33"CF	5	2.05	2.20	0.44
66890-00003TFT5KP	Pins	Pins	2.75"CF	5	2.05	3.20	0.44

KF(QF) Flange， Single-Ended

- Available in 1, 2, 3, and 5 pairs



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)		
					A	B	G
66895-00008TFT2KP	Pins	Pins	KF16	2	2.05	3.20	0.38
66895-00008ATFT2KP	Pins	Pins	KF25	2	2.05	3.20	0.38
66895-00008BTFT2KP	Pins	Pins	KF40	2	2.05	3.20	0.38
66895-00008CTFT2KP	Pins	Pins	KF50	2	2.05	3.20	0.38
66895-00008TFT3KP	Pins	Pins	KF16	3	2.05	3.20	0.44
66895-00008ATFT3KP	Pins	Pins	KF25	3	2.05	3.20	0.44
66895-00008BTFT3KP	Pins	Pins	KF40	3	2.05	3.20	0.44
66895-00008CTFT3KP	Pins	Pins	KF50	3	2.05	3.20	0..44
66895-00008TFT5KP	Pins	Pins	KF16	5	2.05	3.20	0.51
66895-00008BTFT5KP	Pins	Pins	KF40	5	2.05	3.20	0.51

MAGNOX

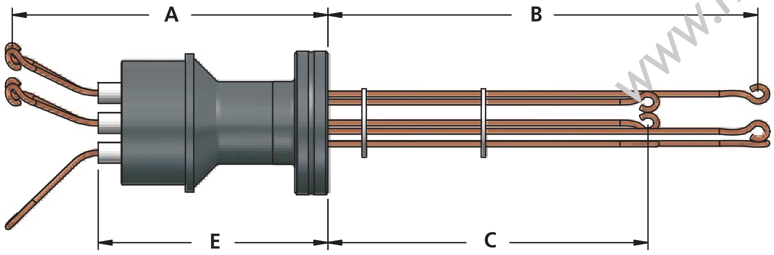
Type R Feedthroughs

R型电偶引线

- Designed for use in high vacuum and UHV applications
- Feature positive wires made of copper and negative wires made of alloy 11 (Type R extension grade wires)
- Temperature range from 0°C to 1,450°C
- Both air-side and and vacuum-side terminate in loops and include a stainless steel nut and screw to facilitate thermocouple atachment

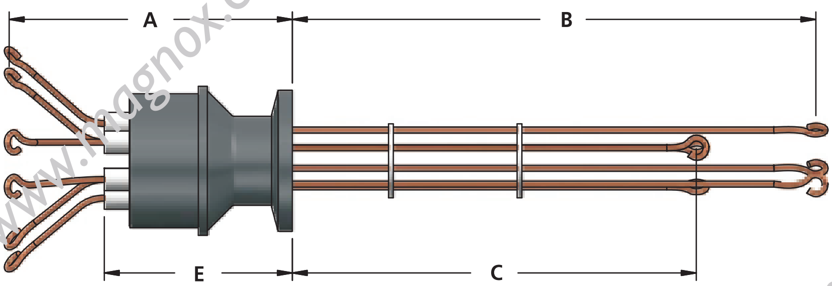
NOTE: Because both Type R and Type S thermocouples use identical extension grade wires, Type R feedthroughs can also be used for Type S.

CF Flange



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66898-00002TFT1RN	Loops	Loops	1.33"CF	1	2.23	4.00	3.00	1.23
66898-00003TFT1RN	Loops	Loops	2.75"CF	1	1.73	4.50	3.50	0.73
66898-00002TFT2RN	Loops	Loops	1.33"CF	2	2.88	4.00	3.00	1.88
66898-00003TFT2RN	Loops	Loops	2.75"CF	2	2.38	4.50	3.50	1.38
66898-00002TFT3RN	Loops	Loops	1.33"CF	3	2.50	4.00	3.00	2.08
66898-00003TFT3RN	Loops	Loops	2.75"CF	3	2.00	4.50	3.50	1.58
66898-00003TFT4RN	Loops	Loops	2.75"CF	4	2.00	4.00	3.00	1.16
66898-00003TFT5RN	Loops	Loops	2.75"CF	5	2.13	4.00	3.00	1.16

KF（QF） Flange



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66899-00008TFT1RN	Loops	Loops	KF16	1	1.73	4.50	3.50	0.73
66899-00008ATFT1RN	Loops	Loops	KF25	1	1.73	4.50	3.50	0.73
66899-00008BTFT1RN	Loops	Loops	KF40	1	1.73	4.50	3.50	0.73
66899-00008TFT2RN	Loops	Loops	KF16	2	2.38	4.50	3.50	1.38
66899-00008BTFT2RN	Loops	Loops	KF40	2	2.38	4.50	3.50	1.38
66899-00008TFT3RN	Loops	Loops	KF16	3	2.00	4.50	3.50	1.58
66899-00008ATFT3RN	Loops	Loops	KF25	3	2.00	4.50	3.50	1.58
66899-00008BTFT3RN	Loops	Loops	KF40	3	2.00	4.50	3.50	1.58
66899-00008BTFT4RN	Loops	Loops	KF40	4	2.00	4.00	3.00	1.16
66899-00008CTFT4RN	Loops	Loops	KF50	4	2.00	4.00	3.00	1.16
66899-00008BTFT5RN	Loops	Loops	KF40	5	2.13	4.00	3.00	1.16

Thermocouple Feedthroughs

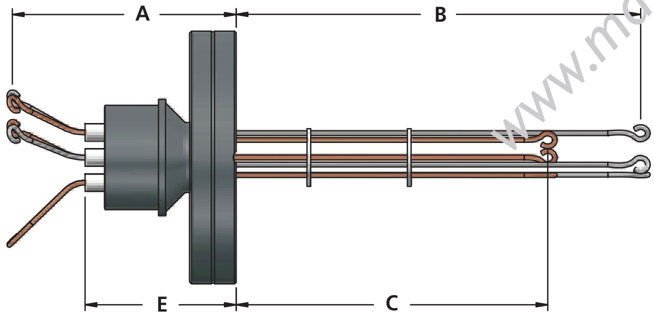
MAGNOX

Type T Feedthroughs

T型电偶引线

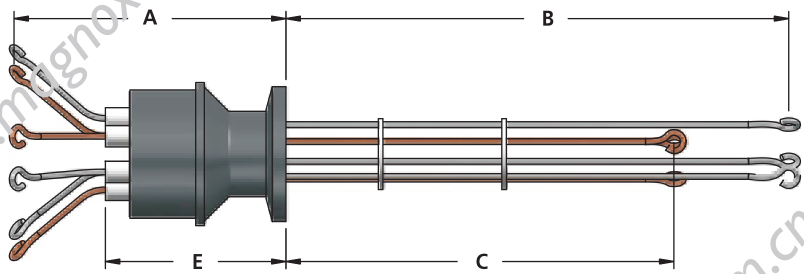
- Designed for use in high vacuum and UHV applications
- Feature positive wires made of copper and negative wires made of Constantan
- Temperature range from -200°C to 350°C
- Both air-side and vacuum-side terminate in loops and include a stainless steel nut and screw/ to facilitate thermocouple attachment

CF Flange



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66900-00002TFT1TN	Loops	Loops	1.33"CF	1	2.23	4.00	3.00	1.23
66900-00003TFT1TN	Loops	Loops	2.75"CF	1	1.73	4.50	3.50	0.73
66900-00002TFT2TN	Loops	Loops	1.33"CF	2	2.88	4.00	3.00	1.88
66900-00003TFT2TN	Loops	Loops	2.75"CF	2	2.38	4.50	3.50	1.38
66900-00002TFT3TN	Loops	Loops	1.33"CF	3	2.50	4.00	3.00	2.08
66900-00003TFT3TN	Loops	Loops	2.75"CF	3	2.00	4.50	3.50	1.58
66900-00003TFT4TN	Loops	Loops	2.75"CF	4	2.00	4.00	3.00	1.16
66900-00003TFT5TN	Loops	Loops	2.75"CF	5	2.13	4.00	3.00	1.16

KF（QF） Flange



Part Number	Air Side	Vac. Side	Flange Size	T/C Pairs	Dimensions, (in.)			
					A	B	C	E
66901-00008TFT1TN	Loops	Loops	KF16	1	1.73	4.50	3.50	0.73
66901-00008ATFT1TN	Loops	Loops	KF25	1	1.73	4.50	3.50	0.73
66901-00008BTFT1TN	Loops	Loops	KF40	1	1.73	4.50	3.50	0.73
66901-00008TFT2TN	Loops	Loops	KF16	2	2.38	4.50	3.50	1.38
66901-00008BTFT2TN	Loops	Loops	KF40	2	2.38	4.50	3.50	1.38
66901-00008CTFT2TN	Loops	Loops	KF50	2	2.00	4.50	3.50	1.58
66901-00008TFT3TN	Loops	Loops	KF16	3	2.00	4.50	3.50	1.58
66901-00008BTFT3TN	Loops	Loops	KF40	3	2.00	4.50	3.50	1.58
66901-00008BTFT4TN	Loops	Loops	KF40	4	2.00	4.00	3.00	1.16
66901-000088TFT5TN	Loops	Loops	KF40	5	2.13	4.00	3.00	1.16

Appendix

MAGNOX

附录一：CF法兰公英制尺寸对照表

序号	公称通径	法兰外径【mm(inch)】	厚度【mm】	铜垫片外径【mm】	PCD【mm】	螺栓类型
A	CF16	34 (1.33")	7.6	21	27	6 x M4
B	CF25	54 (2.12")	11.5	33	41	4 x M6
C	CF40	70 (2.75")	13	48	59	6 x M6
D	CF50	86 (3.38")	16	61	72	8 x M8
E	CF63	114 (4.5")	17.5	82	92	8 x M8
F	CF80	117 (4.62")	17.5	91	102	10 x M8
G	CF100	152 (6")	20	120	130	16 x M8
H	CF130	171 (6.75")	2	141	152	18 x M8
I	CF160	203 (8")	22	171	181	20 x M8
J	CF200	254 (10")	25	222	232	24 x M8
K	CF250	305 (12")	25	272,7	284	32 x M8
L	CF275	337 (13.5")	28	294	306	30 x M10
M	CF300	368 (14.5")	28	326	338	32 x M10
N	CF350	419 (16.5")	28	376	389	36 x M10
O	CF400	470 (18.5")	28	424	438	40 x M10

附录二:真空单位换算表

	帕斯卡 Pa(N/m²)	千克力每平方厘米Kgf/cm²	巴 bar	毫巴 mbar	标准大气压 atm	托 torr	毫米贡柱 mmHg	磅每平方英寸 psi(ib/in²)
Pa	1	1.02×10^{-5}	1×10^{-5}	0.01	9.87×10^{-6}	7.5×10^{-3}	7.5×10^{-3}	1.45×10^{-6}
Kgf/cm²	9.8×10^{4}	1	0.98	980.67	0.967	735.56	735.56	14.2
bar	1×10^{5}	1.02	1	1000	0.987	750.06	750.06	14.5
mbar	100	1.02×10^{-8}	0.001	1	9.87×10^{-4}	0.75	0.75	1.45×10^{-4}
atm	101325	1.03	1.01	1013.25	1	760	760	14.7
torr	133.32	1.36×10^{-3}	1.33×10^{-3}	1.33	1.32×10^{-3}	1	1	1.93×10^{-3}
InH2o	249.09	2.54×10^{-3}	2.49×10^{-3}	2.49	2.46×10^{-3}	1.87	1.87	3.61×10^{-3}
mmHg	133.32	1.36×10^{-3}	1.33×10^{-3}	1.33	1.32×10^{-3}	1	1	1.93×10^{-3}
PSI	6895	7.03×10^{-2}	6.90×10^{-2}	68.95	6.81×10^{-2}	51.715	51.715	1

附录三:温度单位换算表

	K	℃	°F
1 K=	1	℃+273.15	5/9*(°F+459.67)
1 °C =	K-273.15	1	1
1°F=	9/5-459.67	9/5 +32	5/9*(°F-32)

附录四：长度单位换算表

	m	ft	in
1 m=	1	3.28	3.9x10
1 ft =	3.1×10^{-1}	1	1.2x10
1 in=	3.1×10^{-2}	8.3×10^{-2}	1

附录五：流导和漏率单位换算表

	pa*m^3 /s	mbar*l.s	1 torr*l/s	sccm
1 pa*m^3 /s=	1	10	7.5	5.92x10^{-2}
1 mbar*l.s=	1x10^{-1}	1	7.5x10^{-1}	5.92x10
1 torr*l/s=	1.33x10^{-2}	1.33x10^{-2}	1	7.89x10
1 sccm=	1.69x10^{-2}	1.69x10^{-2}	1.27x10^{-3}	1

附录六：抽速单位换算表

	pa*m^3 /s	l/min	m^3/h	cft/min
1 l/m=	1	60	3.6	2.12
1 l/min=	1.67x10^{-2}	1	6x10^{-2}	3.54x10-2
1 m^3/h=	2.8x10^{-1}	1.67x10^{-1}	1	5.9x10-1
1 cft/min=	4.7x10^{-1}	2.83x10^{-1}	1.69	1

附录七：20℃空气中不同压力下的分子平均自由程

1 P(torr)=	1	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-9}
1 λ(cm)=	4.72x10^{-3}	4.72	4.72x10	4.72x10^{2}	4.72x10^{3}	4.72x10^{8}

附录八：不同压强下的分子密度

1 P(torr)=	1	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-9}
1 λ(cm)=	4x10^{16}	4x10^{13}	4x10^{12}	4x10^{11}	4x10^{10}	4x10^{7}

附录九:真空泵选择公式

T=(V/S)x2.303xlog(P1/P2)

T:抽气时间(s),V:被抽腔体容积(L),S:抽气速度(L/s),P1:起始压力(Pa),P2:达到压力(Pa)。
例如:
1.100 升腔体,需要10 分钟从大气抽到 20Pa,如何选择真空泵?
S=(V/T)x2.303x10g(P1/P2)
=(100/10)x2.303x10g(100000/20)
=10x2.303x3.699=85(L/min)
=1.42(L/s),需要选择4L/s的真空泵。
2.100 升腔体,用8L/s 真空泵,从大气抽到 200Pa,需要多长时间?
T=(V/S)x2.303xl0g(P1/P2)
=(100/8)x2.303xlog(100000/200)
=77s,抽气时间需要77秒。

附录十:抽气时间估算公式

T=8V/S

V:被抽腔体容积 (升),S:抽气速度 (升/秒),(适合大气到133Pa压力范围)。
例如:
100 升腔体,用8L/s真空泵,从大气抽到 133Pa,需要用多长时间?
T=8V/S=8*100/8=100s,抽气时间需要100秒。

附录十一:真空表读数与绝对真空度的换算

绝对真空度P≈100,000*(1-ϕ/0.1)Pa, ϕ:真空表读数的绝对值。
例如:真空表读数为-0.075,则绝对真空度P≈100,000*(1-0.075/0.1)≈25,000Pa
真空表读数为-0.097,则绝对真空度P≈100,000*(1-0.097/0.1)≈3.000Pa
真空表读数为-685mmHg,则绝对真空度P≈100,000*(1-685/760)≈10,500Pa
真空表读数为-700mmHg,则绝对真空度P≈100,000*(1-700/760)≈7,800Pa

元素周期表

Periodic Table of the Elements

原子序数	1
元素符号	H
元素中文名称	氢
元素英文名称	hydrogen
惯用原子量	1.008
标准原子量	[1.0078, 1.0082]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 H 氢 hydrogen 1.008 [1.0078, 1.0082]																	2 He 氦 helium 4.0026
3 Li 锂 lithium 6.94 [6.938, 6.997]	4 Be 铍 beryllium 9.0122											5 B 硼 boron 10.81 [10.806, 10.821]	6 C 碳 carbon 12.011 [12.009, 12.012]	7 N 氮 nitrogen 14.007 [14.006, 14.008]	8 O 氧 oxygen 15.999 [15.999, 16.000]	9 F 氟 fluorine 18.998	10 Ne 氖 neon 20.180
11 Na 钠 sodium 22.990	12 Mg 镁 magnesium 24.305 [24.304, 24.307]											13 Al 铝 aluminium 26.982	14 Si 硅 silicon 28.085 [28.084, 28.086]	15 P 磷 phosphorus 30.974	16 S 硫 sulfur 32.06 [32.059, 32.076]	17 Cl 氯 chlorine 35.45 [35.446, 35.457]	18 Ar 氩 argon 39.95 [39.792, 39.963]
19 K 钾 potassium 39.098	20 Ca 钙 calcium 40.078(4)	21 Sc 钪 scandium 44.956	22 Ti 钛 titanium 47.867	23 V 钒 vanadium 50.942	24 Cr 铬 chromium 51.996	25 Mn 锰 manganese 54.938	26 Fe 铁 iron 55.845(2)	27 Co 钴 cobalt 58.933	28 Ni 镍 nickel 58.693	29 Cu 铜 copper 63.546(3)	30 Zn 锌 zinc 65.38(2)	31 Ga 镓 gallium 69.723	32 Ge 锗 germanium 72.630(8)	33 As 砷 arsenic 74.922	34 Se 硒 selenium 78.971(8)	35 Br 溴 bromine 79.904 [79.901, 79.907]	36 Kr 氪 krypton 83.798(2)
37 Rb 铷 rubidium 85.468	38 Sr 锶 strontium 87.62	39 Y 钇 yttrium 88.906	40 Zr 锆 zirconium 91.224(2)	41 Nb 铌 niobium 92.906	42 Mo 钼 molybdenum 95.95	43 Tc 锝 technetium	44 Ru 钌 ruthenium 101.07(2)	45 Rh 铑 rhodium 102.91	46 Pd 钯 palladium 106.42	47 Ag 银 silver 107.87	48 Cd 镉 cadmium 112.41	49 In 铟 indium 114.82	50 Sn 锡 tin 118.71	51 Sb 锑 antimony 121.76	52 Te 碲 tellurium 127.60(3)	53 I 碘 iodine 126.90	54 Xe 氙 xenon 131.29
55 Cs 铯 caesium 132.91	56 Ba 钡 barium 137.33	57-71 镧系 lanthanoids	72 Hf 铪 hafnium 178.49(2)	73 Ta 钽 tantalum 180.95	74 W 钨 tungsten 183.84	75 Re 铼 rhenium 186.21	76 Os 锇 osmium 190.23(3)	77 Ir 铱 iridium 192.22	78 Pt 铂 platinum 195.08	79 Au 金 gold 196.97	80 Hg 汞 mercury 200.59	81 Tl 铊 thallium 204.38 [204.38, 204.39]	82 Pb 铅 lead 207.2	83 Bi 铋 bismuth 208.98	84 Po 钋 polonium	85 At 砹 astatine	86 Rn 氡 radon
87 Fr 钫 francium	88 Ra 镭 radium	89-103 锕系 actinoids	104 Rf 𬬻 rutherfordium	105 Db 𬭊 dubnium	106 Sg 𬭳 seaborgium	107 Bh 𬭛 bohrium	108 Hs 𬭶 hassium	109 Mt 鿏 meitnerium	110 Ds 𫟼 darmstadtium	111 Rg 𬬭 roentgenium	112 Cn 鿔 copernicium	113 Nh 鿭 nihonium	114 Fl 𫓧 flerovium	115 Mc 镆 moscovium	116 Lv 𫟷 livermorium	117 Ts 鿬 tennessine	118 Og 鿫 oganesson

57 La 镧 lanthanum 138.91	58 Ce 铈 cerium 140.12	59 Pr 镨 praseodymium 140.91	60 Nd 钕 neodymium 144.24	61 Pm 钷 promethium	62 Sm 钐 samarium 150.36(2)	63 Eu 铕 europium 151.96	64 Gd 钆 gadolinium 157.25(3)	65 Tb 铽 terbium 158.93	66 Dy 镝 dysprosium 162.50	67 Ho 钬 holmium 164.93	68 Er 铒 erbium 167.26	69 Tm 铥 thulium 168.93	70 Yb 镱 ytterbium 173.05	71 Lu 镥 lutetium 174.97
89 Ac 锕 actinium	90 Th 钍 thorium 232.04	91 Pa 镤 protactinium 231.04	92 U 铀 uranium 238.03	93 Np 镎 neptunium	94 Pu 钚 plutonium	95 Am 镅 americium	96 Cm 锔 curium	97 Bk 锫 berkelium	98 Cf 锎 californium	99 Es 锿 einsteinium	100 Fm 镄 fermium	101 Md 钔 mendelevium	102 No 锘 nobelium	103 Lr 铹 lawrencium

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