

# CD-J 型超高真空挡板阀系列

CD-J Type Ultrahigh Vacuum Baffle Valve Series

## 使用说明书

Operation Instructions

成都中科唯实仪器有限责任公司

CHENGDU WISH INSTRUMENTS CO., LTD.

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## 一、产品简介

CD-J 型超高真空挡板阀用于接通或切断超高真空系统管路中的气流，有气动、手动两种驱动方式。气动阀是通过电磁换向阀改变气流方向来控制气缸运动，达到阀门启闭；手动阀是以人工转动手柄为动力通过螺纹传动实现阀门开闭。适用于介质为空气及非腐蚀性气体的场合。



## 二、产品特点

- ◆模块化设计，结构紧凑，外形美观，重量轻；
- ◆机械磨损小，使用寿命长；
- ◆轴封采用焊接波纹管，密封可靠；
- ◆阀体采用不锈钢内部焊接，漏率小。

## 三、主要技术指标

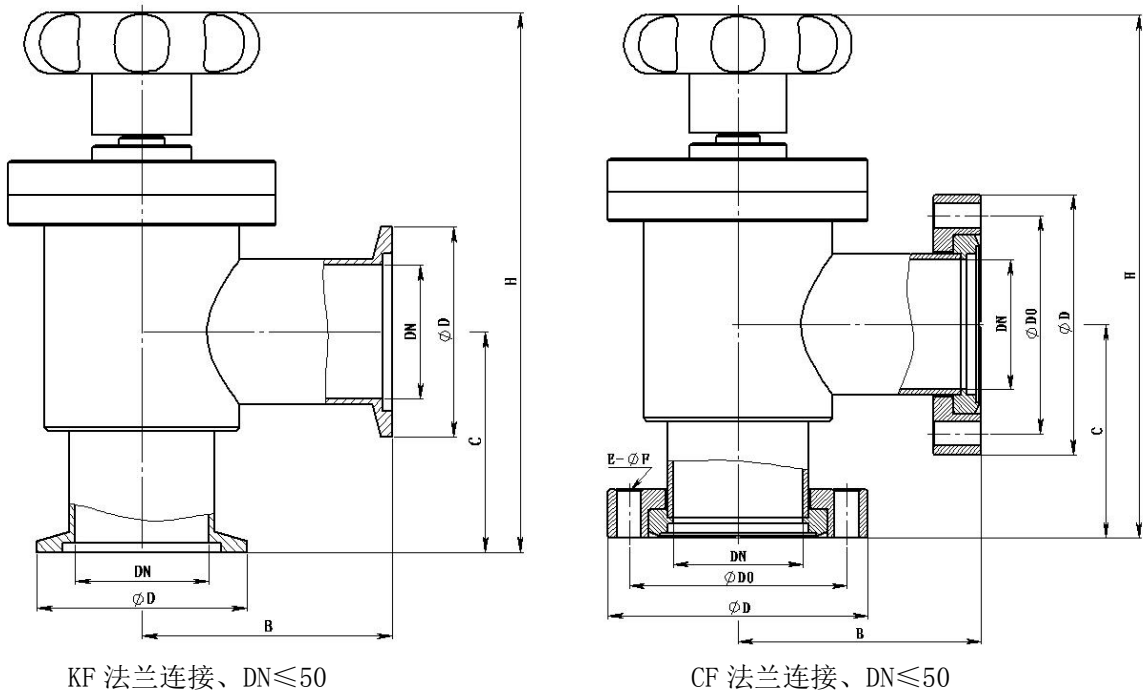
- ◆适用范围： $1 \times 10^5 \text{ Pa} \sim 1 \times 10^{-6} \text{ Pa}$ ；
- ◆漏率： $\leq 1.3 \times 10^{-10} \text{ Pa} \cdot \text{m}^3/\text{s}$ ；
- ◆工作介质：空气、水蒸气、非腐蚀性气体；
- ◆烘烤温度：
  - 打开： $\leq 200^\circ\text{C}$ ；
  - 关闭： $\leq 150^\circ\text{C}$ ；
- ◆压缩空气： $0.4 \sim 0.7 \text{ MPa}$ ；
- ◆电源：AC220V 50Hz, 6W 或者 DC24V, 3W(可选)；
- ◆安装位置：任意。
- ◆阀门位置指示：
  - 手动：带有行程控制销钉；
  - 气动：带有启闭位置指示磁性开关。

## 四、主要零部件材料

阀体、阀杆	不锈钢(304)
阀盖	铝合金、不锈钢(304)
密封件	进口氟橡胶、焊接波纹管(316L)

## 五、外形尺寸

手动超高真空挡板阀外形图



KF 法兰连接(单位: 毫米)

型号	DN	H	B	C	D	重量 (kg)
CD-Jb16KF	16	~103	35	35	30	0.34
CD-Jb25KF	25	~119	45	45	40	0.65
CD-Jb40KF	40	~139	55	55	55	1.87
CD-Jb50KF	50	~181	65	65	75	2.38

CF 法兰连接(单位: 毫米)

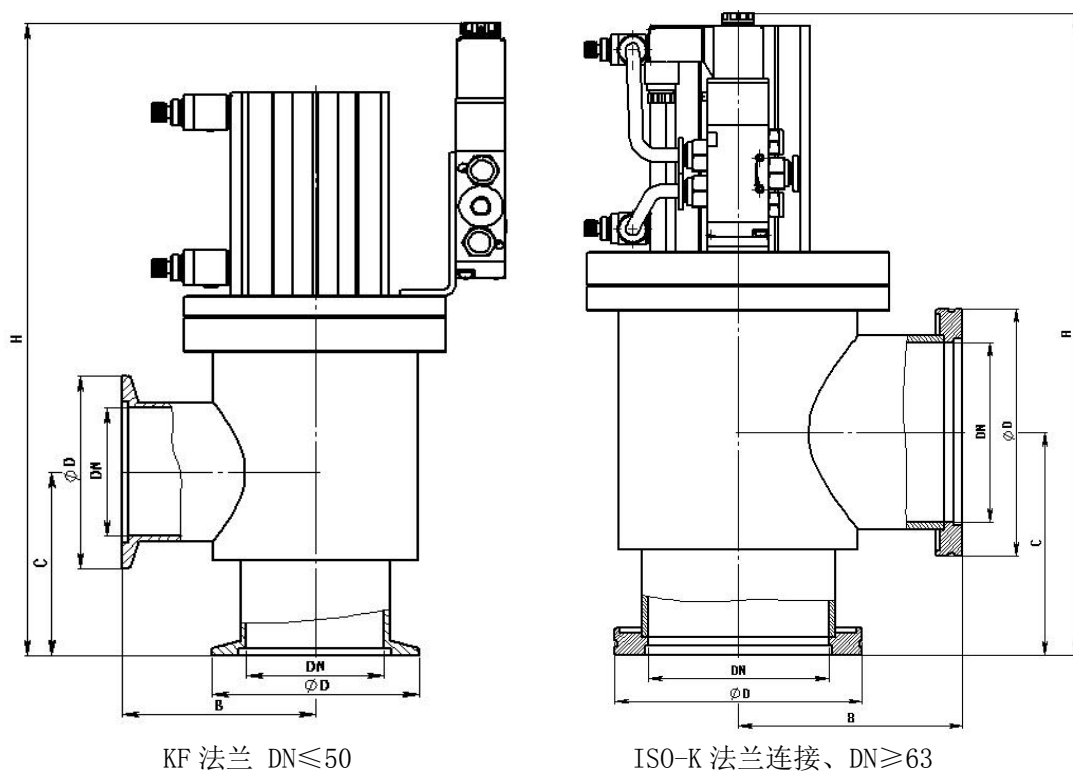
型号	DN	H	B	C	D	D0	E-ØF	重量 (kg)	法兰标准
CD-Jb16CF	16	~111	40	40	34	27	6-Ø4.3	0.38	GB 6071
CD-Jb25CF	25	~137	55	55	54	43	6-Ø6.6	0.87	
CD-Jb35CF	35	~150	63	63	70	58.7	6-Ø6.6	1.50	
CD-Jb50CF	50	~196	80	80	86	72.4	8-Ø8.4	3.12	

◇连接法兰可以做成 KF、ISO-K、ISO-F、CF 或者根据客户要求定制;

◇J 表示角阀; B 表示轴封为焊接波纹管密封结构;

◇KF: 表示 KF 快卸法兰连接; ISO-K: 表示 ISO-K 法兰连接; CF: 表示 CF 刀口法兰连接。

气动超高真空挡板阀外形图



KF 法兰 DN≤50

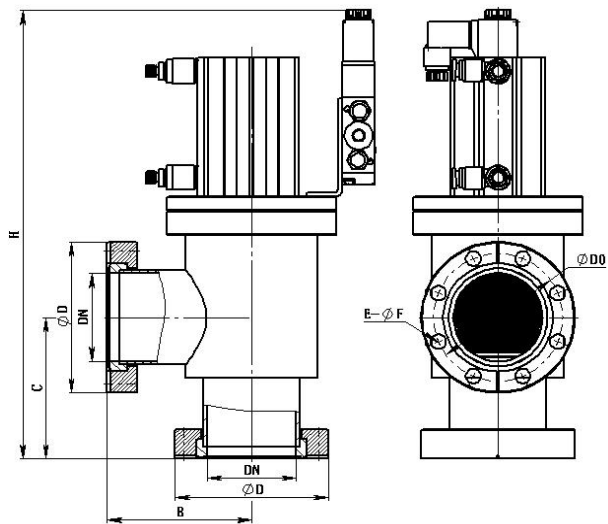
ISO-K 法兰连接、DN≥63

KF 法兰连接(单位: 毫米)

型号	DN	H	B	C	D	重量 (kg)
CDQ-JB16KF	16	~115	35	35	30	0.57
CDQ-JB25KF	25	~153	45	45	40	1.30
CDQ-JB40KF	40	~167	55	55	55	1.87
CDQ-JB50KF	50	~237	65	65	75	3.74

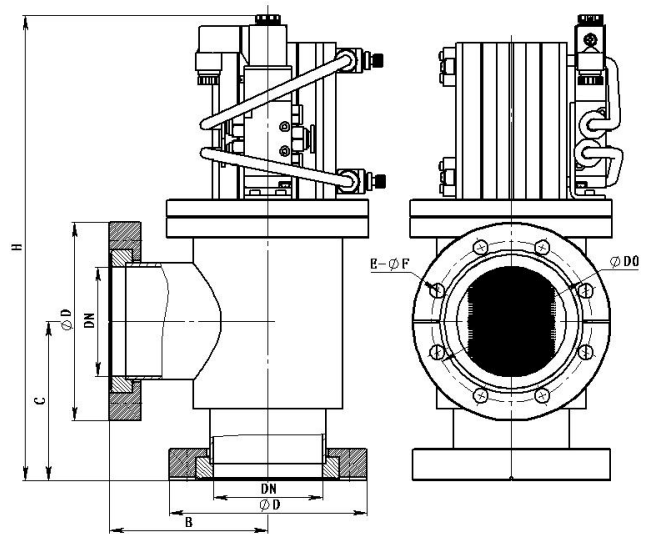
ISO-K 法兰连接(单位: 毫米)

型号	DN	H	B	C	D	重量 (kg)	法兰标准
CDQ-JB50ISO-K	50	~252	80	80	75	4.01	GB 6070
CDQ-JB63ISO-K	63	~266	90	90	95	5.25	
CDQ-JB80ISO-K	80	~285	100	100	110	6.17	
CDQ-JB100ISO-K	100	~301	108	108	130	10.04	
CDQ-JB150ISO-K	150	~388	140	140	180	20.74	
CDQ-JB200ISO-K	200	~484	178	178	240	37.64	
CDQ-JB250ISO-K	250	~719	208	208	290	62.90	
CDQ-JB320ISO-K	320	~858	250	250	370	139.84	
CDQ-JB400ISO-K	400	~1033	330	330	450	161.25	



刀口法兰 DN≤50

注：气缸、电磁阀可以做成整体式



刀口法兰 DN≥63

CF 法兰连接(单位：毫米)

型号	DN	H	B	C	D	D0	E-ØF	重量 (kg)	法兰标准
CDQ-JB16CF	16	~121	40	40	34	27	6-Ø4.3	0.62	GB 6071
CDQ-JB25CF	25	~167	55	55	54	43	6-Ø6.6	1.54	
CDQ-JB35CF	35	~175	63	63	70	58.7	6-Ø6.6	2.30	
CDQ-JB50CF	50	~252	80	80	86	72.4	8-Ø8.4	4.03	
CDQ-JB63CF	63	~266	90	90	114	92.2	8-Ø8.4	5.87	
CDQ-JB80CF	80	~285	100	100	130	110	16-Ø8.4	7.48	
CDQ-JB100CF	100	~311	118	118	152	130.3	16-Ø8.4	12.05	
CDQ-JB150CF	150	~398	150	150	202	181	20-Ø8.4	24.20	
CDQ-JB200CF	200	~490	184	184	253	231.8	24-Ø8.4	42.89	
CDQ-JB250CF	250	~731	220	220	305	284	32-Ø8.4	69.09	
CDQ-JB320CF	300	~870	260	260	368.3	338.1	32-Ø10.8	149.89	
CDQ-JB400CF	400	~1045	340	340	469.9	437.9	40-Ø10.8	174.47	

注：

◇连接法兰可以做成 KF、ISO-K、ISO-F、CF 或者根据客户要求定制；

◇J 表示角阀；B 表示轴封为焊接波纹管密封结构；

◇KF：表示 KF 快卸法兰连接；ISO-K：表示 ISO-K 法兰连接；CF：表示 CF 刀口法兰连接。

## 六、安装使用和维护保养

1. 安装前应对阀的主要零件进行检查：
  - 运输过程中是否有损坏
  - 检查螺杆传动部分是否灵活自如
  - 所有刀口及密封面处均不允许有划痕、斑点等
  - 检查腔体及连接面是否清洁，应保证符合真空卫要求
  - 安装前用超高灵敏度氦质谱检漏仪检查，即把阀关闭密封后，其漏气率应小于  $1.3 \times 10^{-10} \text{ Pa} \cdot \text{m}^3/\text{s}$ ；
2. 阀门开启、关闭时要注意用力平稳、均匀，垂直向密封面压紧即可，不得用力过猛，以免造成橡胶密封圈过大弹性变形而密封不好，影响使用寿命；
3. 阀的安装可根据系统需要安装在合适的位置上，任意方向均可，但是必须考虑到手轮转动方便，螺杆受力均匀；
4. 阀应经常保持清洁，并且存放于室内干燥处；
5. 阀经维修装配后，必须进行清洗，满足真空卫生要求，待真空密封性等验收合格后，方可装入系统；
6. 阀长期存放时应注意保护密封面，防止受潮，注意润滑、干燥等，松套法兰和 KF 法兰必须罩上塑料盖；
7. 阀暂不使用时，请松开氟橡胶密封面，提高密封圈的使用寿命。

## 七、可能发生的故障及消除方法

故障	故障原因	消除方法
密封不良	密封面有油污附着	将污物清除干净
	密封面有划痕	用抛光纸或用机床修去划痕
	橡胶密封圈破损	更换新的密封圈
	波纹管损坏	更换波纹管或补焊

## 八、使用中的注意事项

阀门应在密封阀板两侧气压平衡的条件下开阀，否则会导致阀打不开。若强行开阀，易损伤密封圈和传动机构。

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## 九、仪器成套

序号	名称	数量	单位	备注
1	超高真空挡板阀	1	台	
2	使用说明书	1	份	
3	检验合格证	1	份	
4	保护盖	2	个	

### 保修说明

凡购买我公司生产的挡板阀产品，从购机日起凭保修单可保修一年。外地用户可延长一个月。在保修期内不收修理费，如需更换零件，一般核收半费，不超过半年可免费。

凡属下列情况之一的不予保修：

1. 用户对产品私自拆卸或对其工艺结构有人为修改、加工。
2. 用户保管或使用不当。
3. 属于用户其他原因造成的损坏。

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## 产品保修单

产品名称：CD\_\_\_-J\_\_\_\_\_ 系列超高真空挡板阀

产品编号：\_\_\_\_\_

出厂日期：\_\_\_\_\_

用户单位：\_\_\_\_\_

日期	维修内容	维修人

.....剪.....开.....盖.....章.....处..

以下请用户详细填写并寄回我公司以备查询

产品名称：CD\_\_\_-J\_\_\_\_\_系列超高真空挡板阀

联系人：\_\_\_\_\_

产品编码：\_\_\_\_\_

联系电话：\_\_\_\_\_

购机日期：\_\_\_\_\_

邮政编码：\_\_\_\_\_

单位地址：\_\_\_\_\_

联系单位：\_\_\_\_\_

## I. Product Introduction

CD-J type ultrahigh vacuum baffle valve is used to put through or cut off air stream in ultrahigh vacuum system pipeline. It has two driving modes of pneumatic or manual operations. Pneumatic valve controls the motion of cylinder by utilizing magnetic exchange valve to change the direction of air stream, thus it can be opened or closed. Manual valve is opened or closed through screw drive when it is driven under manual rotation force. Thus it is applicable for these occasions with air and non-corrosive gas as working media.



## II. Product Characteristics

- ◆ Modular design, compact structure, elegant appearance and light weight;
- ◆ Low mechanical wear and long service life;
- ◆ Shaft seal adopts welded bellows with reliable tightness;
- ◆ Valve body adopts stainless steel internal welding with low leak rate.

## III. Main Technical Parameters

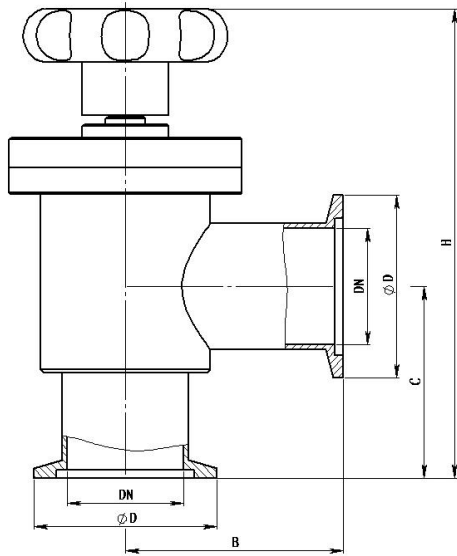
- ◆ Range of Application:  $1 \times 10^5 \text{ Pa} \sim 1 \times 10^{-6} \text{ Pa}$
- ◆ Leak rate:  $\leq 1.3 \times 10^{-10} \text{ Pa} \cdot \text{m}^3/\text{s}$
- ◆ Working medium: air, water vapor and non-corrosive gas;
- ◆ Baking temperature:
  - On:  $\leq 200^\circ\text{C}$ ;
  - Off:  $\leq 150^\circ\text{C}$
- ◆ Compressed air:  $0.4 \sim 0.7 \text{ MPa}$ ;
- ◆ Power supply: AC220V 50Hz, 6W or DC24V, 3W (optional);
- ◆ Installation position: at any position.
- ◆ Valve position indication:
  - Manual: with stroke control pin;
  - Pneumatic: with on/off position indication magnetic switch.

## IV. Materials of Main Parts and Components

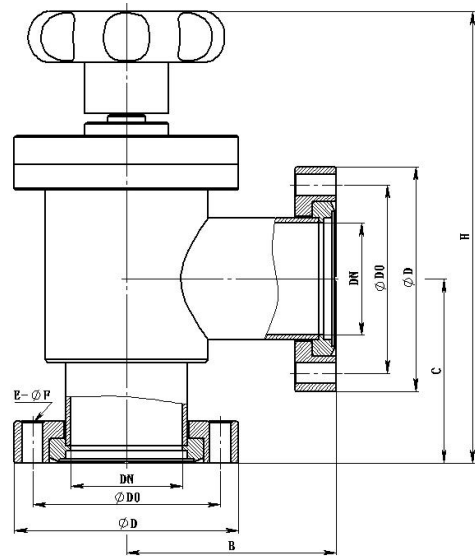
Valve body and valve rod	Stainless steel (304)
Valve hood	Aluminum alloy, stainless steel (304)
Sealing element	Imported fluororubber, welded bellow (316L)

## V. Overall Dimensions

## Outline Drawing of Manual Ultrahigh Vacuum Baffle Valve



**KF Flange Connection, DN ≤ 50**



**CF Flange Connection, DN ≤ 50**

KF Flange Connection (Unit: mm)

Model	DN	H	B	C	D
CD-JB16KF	16	~106	35	35	30
CD-JB25KF	25	~127	45	45	40
CD-JB40KF	40	~142	55	55	55
CD-JB50KF	50	~181	65	65	75

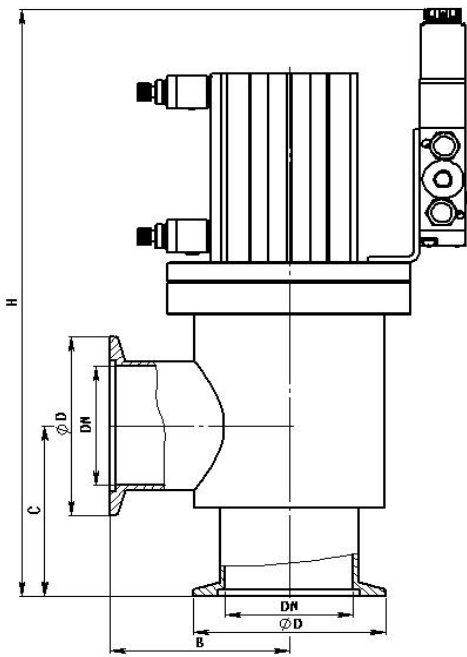
CF Flange Connection (Unit: mm)

Model	DN	H	B	C	D	D0	E-ØF	Flange Standard
CD-JB16CF	16	~111	40	40	34	27	6-Ø4.3	GB 6071
CD-JB25CF	25	~137	55	55	54	43	6-Ø6.6	
CD-JB35CF	35	~150	63	63	70	58.7	6-Ø6.6	
CD-JB50CF	50	~196	80	80	86	72.4	8-Ø8.4	

Note:

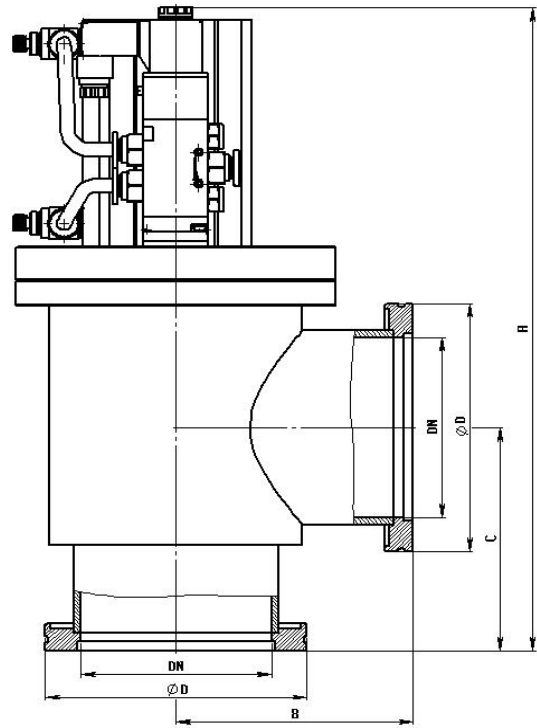
- ✧ Connecting flange can be made into KF, ISO-K, ISO-F, CF or can be custom-made according to client's requirements.
- ✧ J represents angle valve; B represents that shaft seal adopts seal structure of welded bellows;
- ✧ KF represents KF quick-release flange connection; ISO-K represents ISO-K flange connection; CF represents CF knife-edge flange connection.

## Outline Drawing of Pneumatic Ultrahigh Vacuum Baffle Valve



KF Flange DN≤50

Note: Cylinder and solenoid valve can be made into integral ones.



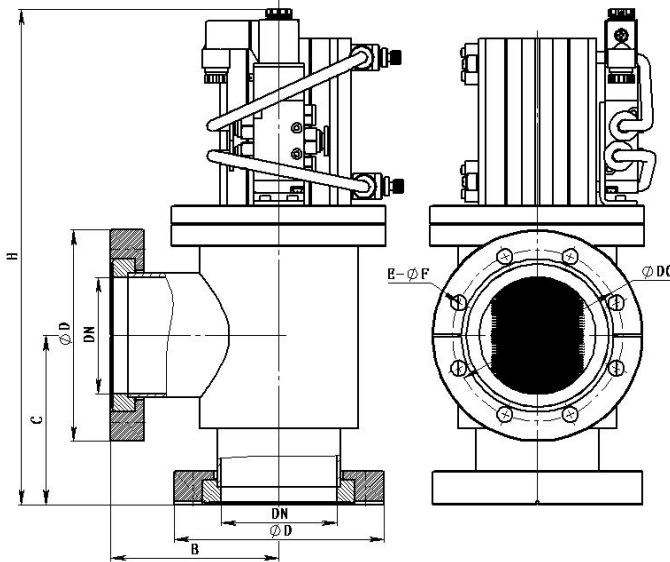
ISO Flange Connection DN≥63

KF Flange Connection (Unit: mm)

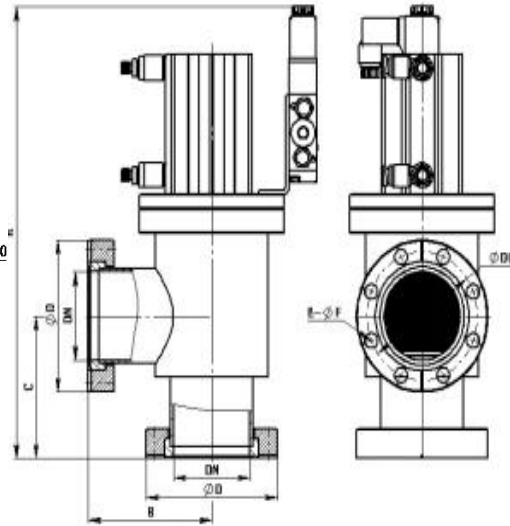
Model	DN	H	B	C	D
CDQ-JB16KF	16	~116	35	35	30
CDQ-JB25KF	25	~157	45	45	40
CDQ-JB40KF	40	~162	55	55	55
CDQ-JB50KF	50	~237	65	65	75

ISO-K Flange Connection (Unit: mm)

Model	DN	H	B	C	D	Flange Standard
CDQ-JB50ISO-K	50	~252	80	80	75	Loose Flange As Option GB6070 (National Standard)
CDQ-JB63ISO-K	63	~266	90	90	95	
CDQ-JB80ISO-K	80	~285	100	100	110	
CDQ-JB100ISO-K	100	~301	108	108	130	
CDQ-JB150ISO-K	150	~388	140	140	180	
CDQ-JB200ISO-K	200	~484	178	178	240	
CDQ-JB250ISO-K	250	~719	208	208	290	
CDQ-JB320ISO-K	320	~858	250	250	370	
CDQ-JB400ISO-K	400	~1033	330	330	450	



Knife-edge Flange DN≤50



Knife-edge Flange DN≥63

Note: Cylinder and solenoid valve can be made into integral ones.

CF Flange Connection (Unit: mm)

Model	DN	H	B	C	D	D0	E-∅F	Flange Standard
CDQ-JB16CF	16	~121	40	40	34	27	6-∅4.3	GB 6071
CDQ-JB25CF	25	~167	55	55	54	43	6-∅6.6	
CDQ-JB35CF	35	~175	63	63	70	58.7	6-∅6.6	
CDQ-JB50CF	50	~252	80	80	86	72.4	8-∅8.4	
CDQ-JB63CF	63	~266	90	90	114	92.2	8-∅8.4	
CDQ-JB80CF	80	~285	100	100	130	110	16-∅8.4	
CDQ-JB100CF	100	~311	118	118	152	130.3	16-∅8.4	
CDQ-JB150CF	150	~398	150	150	202	181	20-∅8.4	
CDQ-JB200CF	200	~490	184	184	253	231.8	24-∅8.4	
CDQ-JB250CF	250	~731	220	220	305	284	32-∅8.4	
CDQ-JB300CF	300	~870	260	260	368.3	338.1	32-∅10.8	
CDQ-JB400CF	400	~1045	340	340	469.9	437.9	40-∅10.8	

Note:

- ✧ Connecting flange can be made into KF, ISO-K, ISO-F, CF or can be custom-made according to client's requirements.
- ✧ J represents angle valve; B represents that shaft seal adopts seal structure of welded bellows;
- ✧ KF represents KF quick-release flange connection; ISO-K represents ISO-K flange connection; CF represents CF knife-edge flange connection.

**VI. Installation Use and Maintenance**

1. Before installation, main parts and components of valve shall be checked:
  - If they are damaged during transportation;
  - Check if the screw drive portion can rotate flexibly;
  - Scratches and spots, etc. are not allowed at all knife edges and sealing surfaces;
  - Check if chamber and connection surface are clean, which shall comply with vacuum sanitary requirements;
  - Before installation, inspection shall be carried out by use of helium mass spectrometer leak detector, i.e. after the valve is closed and sealed, its leak rate shall be lower than  $1.3 \times 10^{-10}$  Pa.m<sup>3</sup>/s;
2. While opening/closing valve, pay attention to applying stable and uniform force, vertically pressing towards sealing surface. Overexertion is not allowed in order to avoid elastic deformation of too large rubber sealing ring causing poor sealing and thus affecting the service life.
3. Valve can be installed in any direction at a proper position as needed by the system, but it must be taken into account that hand wheel shall be rotated easily and screw shall be stressed uniformly;
4. Valve shall be often kept clean and stored at indoor dry place.
5. Valve must be cleaned after maintenance and assembly, which shall be installed into the system after meeting vacuum sanitary requirements and passing acceptance tests such as vacuum sealing performance inspection;
6. If valve will be stored for a long time, sealing surface shall be protected against dampening, pay attention to lubrication and drying etc. Loose flange and KF flange must be covered with plastic cap.
7. If valve will not be used temporarily, fluororubber sealing surface shall be loosened to improve the service life of sealing ring.

## VII. Possible Troubles and Troubleshooting Methods

Trouble	Causes	Troubleshooting Methods
Poor sealing	Sealing surface has oil stain	Remove the dirt
	Sealing surface has scratches	Trim scratches with polishing paper or machine
	Rubber sealing ring is broken	Replace it with a new sealing ring
	Bellows is broken	Replace the bellows or conduct repair welding

## VIII. Precautions for Use

The valve shall be opened under the condition that air pressures at both sides of valve are balanced,

otherwise it will be unable to open the valve. If you force to open the valve, it may damage sealing ring and drive mechanism.

#### **IX. Instrument Kits**

S/N	Description	Q'ty	Unit	Remarks
1	Ultrahigh vacuum baffle valve	1	Set	
2	Operation Instructions	1	Copy	
3	Inspection certificate	1	Copy	
4	Protective cap	2	PC	

#### **Warranty Instructions**

Any baffle valve product that you purchase from our company can be guaranteed for one year since the date of buying with warranty bill. But for non-local users, the guarantee period can be extended fro one month. Repair cost will not be charged within the guarantee period. If it is necessary to replace parts, generally half fee will be charged, and it will be free of charge if no more than half year.

For any of the following situations, we have no warranty responsibility:

4. If the product is disassembled by the user privately and its technological structure is modified and process artificially.
5. It is kept or used improperly by user.
6. It is damaged due to user's other reasons.

### Product's Warranty Bill

Product Name: CD\_\_\_-J\_\_\_\_\_ Series of Ultrahigh Vacuum Baffle Valve

Product Number: \_\_\_\_\_

Date of Production: \_\_\_\_\_

User Unit: \_\_\_\_\_

Date	Maintenance Content	Maintainer

.....Cut off.....Stamp.....

Please fill in the Product's Warranty Bill in detail and send it back to our company for query.

Product Name: CD\_\_\_-J\_\_\_\_\_ Series of Ultrahigh Vacuum Baffle Valve

Contact Person: \_\_\_\_\_

Product Code: \_\_\_\_\_ Phone: \_\_\_\_\_

Date of Machine Purchasing: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Unit Address: \_\_\_\_\_

Contact Unit: \_\_\_\_\_



公司总部：

地址：四川省成都市科园南一路 7 号

电话：028-85121820-843/807

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