

VD



BIDIRECTIONAL Multi-sector Diaphragm Damper Valve

OPERATING

The Diaphragm valve operating system consists of a series of interposed sheets, which at one end have a fixed point that facilitates rotation and on the other they have a sliding type fitting that allows circular movement combined with a displacement concentric, enabling the opening / closing effect, similar to that of a photo optic, so that the flow always flows through the center of the duct.

FUNCTIONALITY

- Multisector Damper Diaphragm Valve, with VD bidirectional design.
- Valid for pneumatic transport of air or gases at different temperatures.
- Manufacture by means of drilled flanges according to standard.
- Seals available between 98% and 99%.
- Between faces according to the **CMO Valves** standard..

GENERAL APPLICATIONS

These damper diaphragm valves are suitable for working with a wide range of air and gases. They are especially indicated to control the passage of gases in conductions.

Mainly used in:

- Cogeneration plants
- Thermal power stations.
- Power stations
- Chemical plants
- Energy sector.

SIZES

From ND100 to ND600 (other dimensions on request). To know the general dimensions of a multi-sector dampers diaphragm valve in particular, consult to **CMO Valves**

WORK PRESSURE (ΔP)

The maximum standard working pressure is 0.25 bar, for higher pressures on request.

WORK TEMPERATURE ($^{\circ}C$)

This equipment usually works at ambient temperature, for other temperatures please consult with **CMO Valves**.

SEALING

The standard sealing percentage for these valves ranges from 98% to 99%.

SERIE - VD



FLANGES

The fastening of these valves to the conduction will be done by screwing the drilled flanges with which the equipment is manufactured.

The connection of the flanges and the inter-faces thereof are according to the **CMO Valves** standard, however on request, it can also be built adapting to the needs of the client.

DIRECTIVES

- Pressure Equipment Directive: **(PED) ART 4.3 /CAT.1.**
- Potential Explosive Atmospheres Directive: **(ATEX) CAT.3 ZONA 2 y 22 GD.**

*For further information on categories and zones please contact the Technical-Commercial Dept. **CMO VALVES**.*

QUALITY DOSSIER

All valves are tested hydrostatically at **CMO Valves**, and material and test certificates can be provided.

ADVANTAGES

The construction of these valves of the VD Series, presents a novel opening and closing concept based on diaphragm systems, which is intended to improve the performance of current equipment.

Current closure systems based primarily on vertical and horizontal closures and openings generate pressure losses and turbulence. In the vertical or horizontal closure system the flow of the fluid is obstructed unevenly, which causes a series of distortions and disturbances in it.

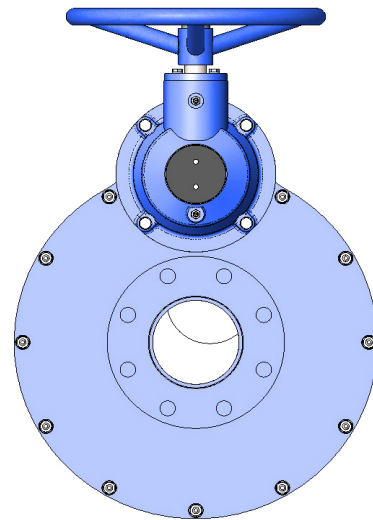
These effects are likely to cause undesirable results, not only in the fluid itself, but also in elements of the circuit environment in which the equipment is installed, such as elements intended for the measurement of speed, flow, pressure, etc. ...

Los hechos anteriormente descritos generan consecuencias negativas, por un lado, en lo referente al control del propio fluido y por otro, en cuanto a la limpieza de los conductos. Dichas distorsiones provocan que se depositen pequeñas partículas que acompañan a los fluidos en determinadas zonas de las válvulas.

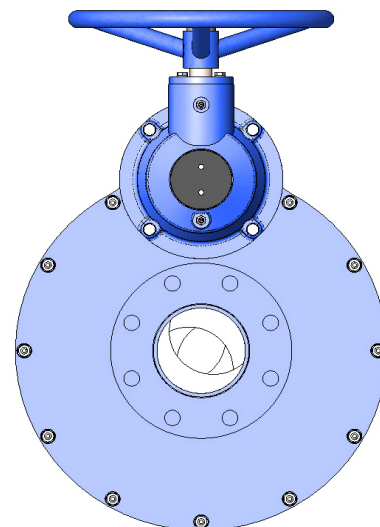
The facts described above generate negative consequences, on the one hand, in relation to the control of the fluid itself and on the other, in terms of cleaning the ducts. These distortions cause small particles to be deposited that accompany the fluids in certain areas of the valves.

In the second case, the closing of the butterfly type even in its opening position, supposes an obstacle for the passage of the fluid, which makes possible said deposit of particles previously mentioned.

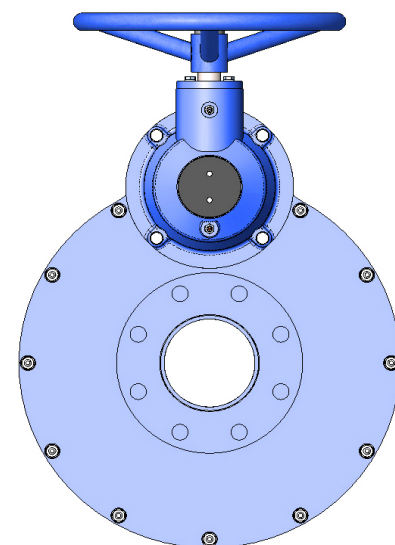
In the installation of the VD Series diaphragm valve, a concentric closure is obtained and therefore a greater uniformity in the control of the fluid to be treated, minimizing pressure losses in the same and obtaining in its opening position a total passage in the duct.



CLOSE VALVE



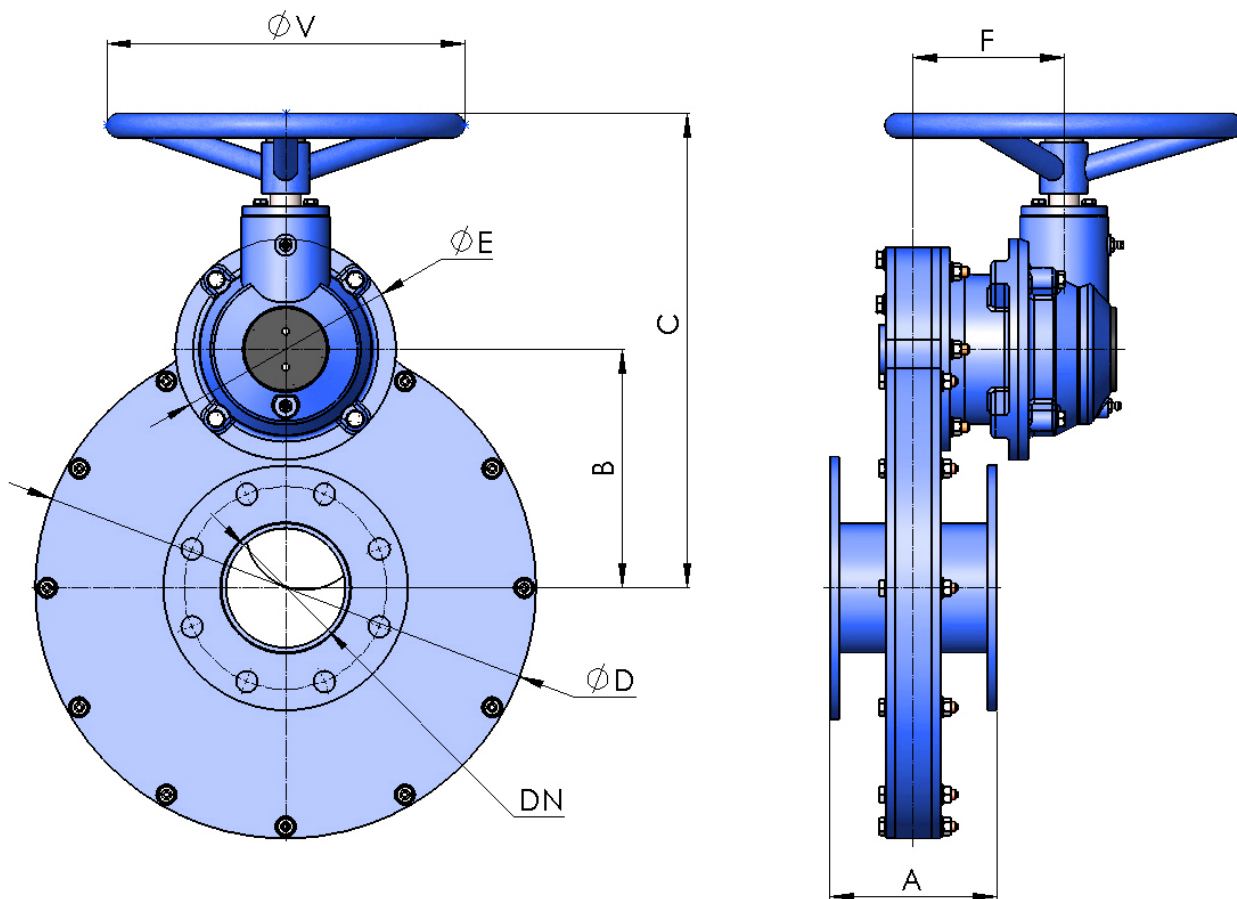
OPEN MIDDLE VALVE



OPEN VALVE

GEAR BOX

- Available: ND100 ND600, Others ND on request

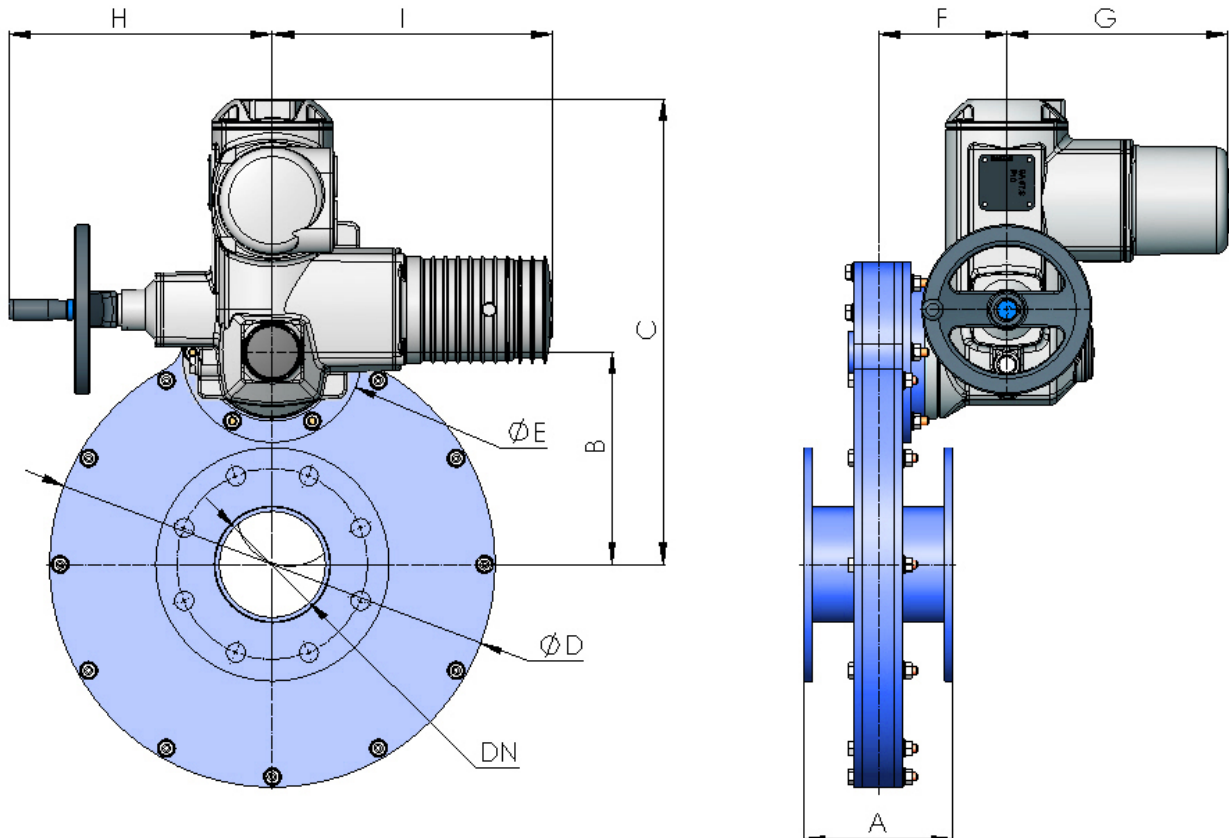


SIZES

DN	A	B	C	ØD	ØE	F	ØV
100	140	215	415	440	185	130	300
150	140	305	505	620	185	130	300
200	140	395	595	800	185	130	300
250	140	485	685	980	185	130	300
300	180	595	815	1200	185	130	450
350	180	685	905	1380	185	130	450
400	180	775	995	1560	185	130	450
500	180	955	1175	1920	185	130	450
600	180	1135	1355	2280	185	130	450

MOTOR

- Available: ND100 ND600, Others ND on request

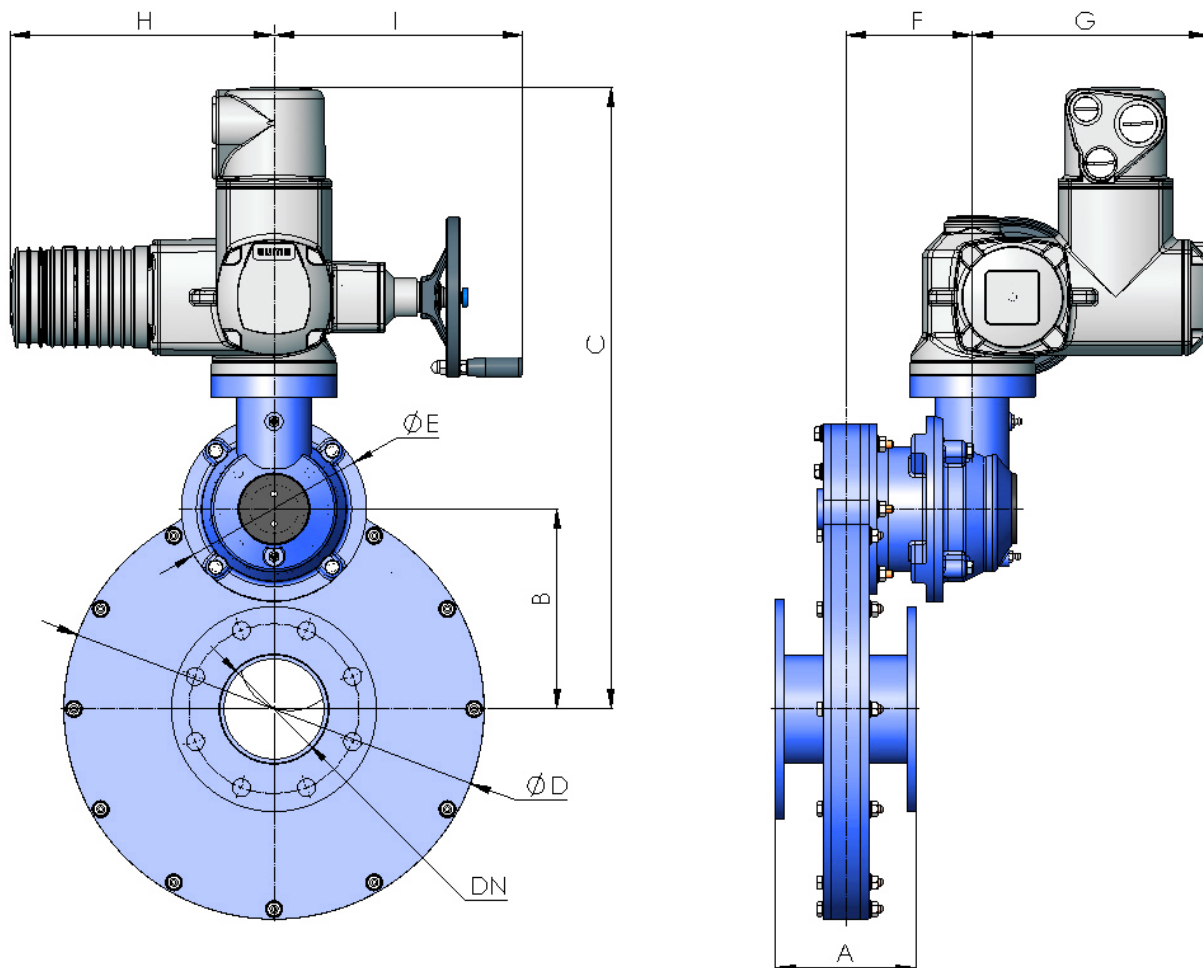


SIZES

DN	A	B	C	ØD	ØE	F	G	H	I
100	140	215	705	440	185	75	200	250	280
150	140	305	545	620	185	75	200	250	280
200	140	395	635	800	185	75	200	250	280
250	140	485	725	980	185	75	200	250	280
300	180	595	835	1200	185	95	200	250	280
350	180	685	925	1380	185	95	200	250	280
400	180	775	1015	1560	185	95	200	250	280
500	180	955	1195	1920	185	95	200	250	280
600	180	1135	1375	2280	185	95	200	250	280

MOTOR + GEAR BOX

- Disponible: DN100 DN600, otros DN bajo consulta



SIZES

DN	A	B	C	ØD	ØE	F	G	H	I
100	140	215	640	440	185	130	250	280	255
150	140	305	730	620	185	130	250	280	255
200	140	395	820	800	185	130	250	280	255
250	140	485	910	980	185	130	250	280	255
300	180	595	1020	1200	185	130	250	280	255
350	180	685	1110	1380	185	130	250	280	255
400	180	775	1200	1560	185	130	250	280	255
500	180	955	1380	1920	185	130	250	280	255
600	180	1135	1560	2280	185	130	250	280	255

DESIGN FEATURES

1. BODY

The body of this type of diaphragm diaphragm valves, is mostly composed of elements obtained by laser cutting, although both in the flanged connection and in the area of the bonnet, welding methods are used for the sealing of certain areas. The drilling of the pipe connection flanges, can be carried out under any regulations specified by the customer, however and on request, both between faces and the rule of the flanges can be adapted, according to the particular needs of each case. The construction materials used are very varied, they are chosen according to the needs of the valve, depending on the working temperature, pressure, dimension, etc ...

As a normal rule, carbon steel dampers diaphragm valves are painted with an anti-corrosive protection of 80 microns of EPOXY, color RAL 5015, but other types of anticorrosive protections are available.

2. SECTORS

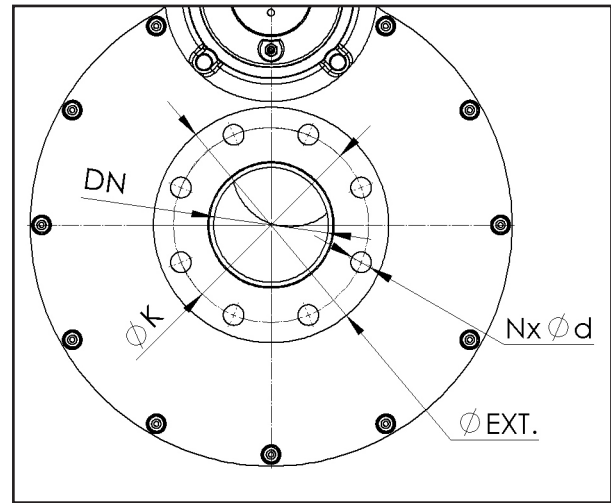
The closing system of these diaphragm diaphragm valves is composed of a series of interposed sectors that converge in a central point, disposing at one end of a fixed point that facilitates their rotation and at the other end of a socket of the sliding type, which allows circular movement combined with concentric displacement; obtaining in this way the effect of opening and closing, similar to the Diaphragm Damper Valve.

The sectors are designed based on the size of the driving and the working pressure to which they will be subjected. Normally the slats are made of AISI304 stainless material, since due to their interposed arrangement it is not convenient for them to be painted, but on request they can be manufactured with other materials, according to the needs of the client.

3. RESILIENT SEAT

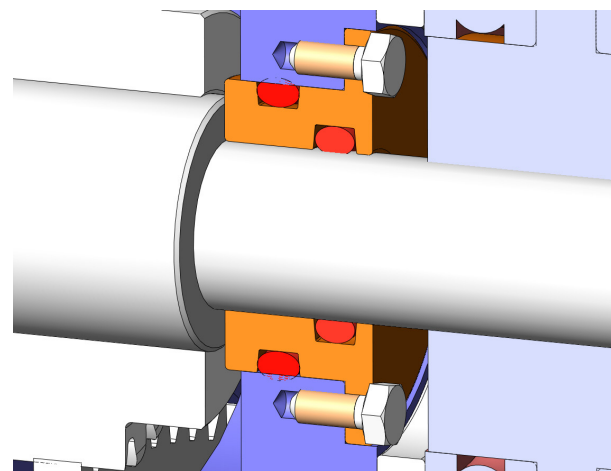
The tightness in the area of the shaft is made by the provision of O-rings housed in a bronze bushing, which provide the tightness between the shaft and the bonnet, thus avoiding any type of leakage into the atmosphere, said seals will be of a suitable material to the requested temperature requirements.

In response to extreme temperature conditions, this type of sealing may be replaced by graphite gaskets, or ceramic material. In any case, the sealing system is located in an easily accessible area and can be replaced without the need to disassemble the valve from the line.



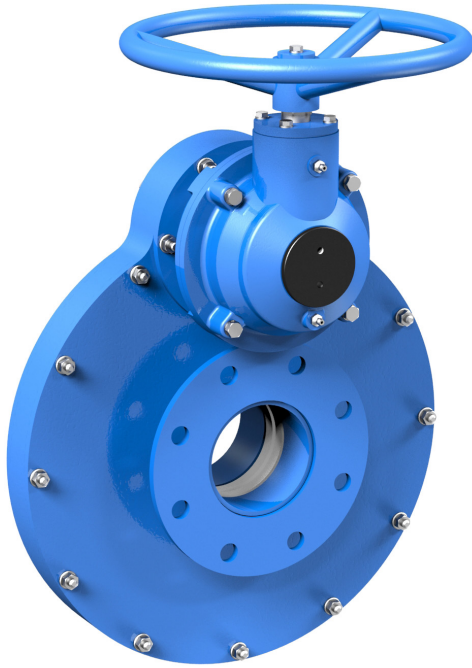
ØDN	100	150	200	250	300	350	400	500	600
ØEXT.	220	285	340	395	445	505	565	670	780
ØK	180	240	295	350	400	460	515	620	725
N	8	8	8	12	12	16	16	20	20
Ød	18	22	22	22	22	22	26	26	30

- Other flange sizing on request.



ACTUATORS

The actuator system of the diaphragm valves is located at the top end, as can be seen in the figures; the actuator is tied bolted to the bonnet, transmitting the generated torque to the drive shaft, using the spindle and nut system; in this way it is achieved that all sectors move synchronized achieving the desired opening and closing effect.



GEAR BOX HANDWHEEL



ELECTRIC ACTUATOR



**ELECTRIC ACTUATOR
WITH GEAR BOX**



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