

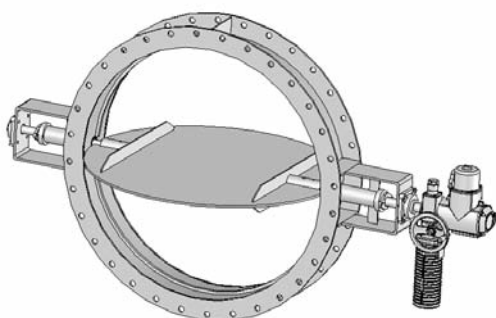
## BUTTERFLY DAMPER

The ML model is a butterfly damper for assembly between flanges on gas conduit systems. The ORBINOX standard model is designed for operation at pressures of 100 mbar, with recommended speeds of below 30 m/s and temperatures of 600 °C.

It is a relatively air tight valve with a closing degree of between 90% and 99% which can reach 100% if an air sealing system is included (see ML2).

The standard model of these dampers is designed so that the assembly is carried out in such a way that the drive shaft always remains in a horizontal position, although there is an option of assembly with the shaft in vertical position on request.

### STANDARD BUTTERFLY DAMPER (ML)



#### Description

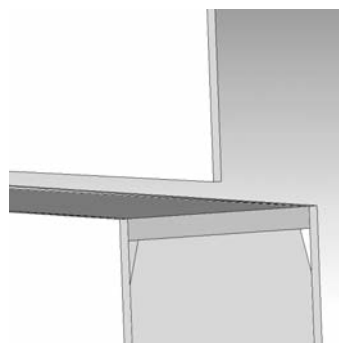
This two-way damper has the function of controlling the passage of gases circulating in the conduit. The butterfly damper is made up of a disc or disc shutter which rotates on two semi-shafts. The butterfly damper is normally supplied as a single part, except for applications in which the dimensions of the unit require special transport.

#### Construction

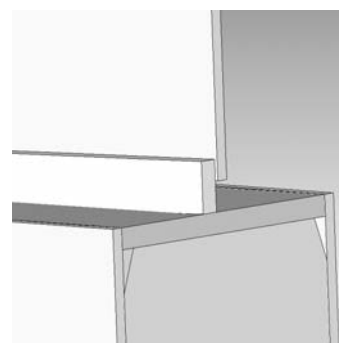
The body of the butterfly dampers is a fabricated construction which can be made of different materials. Standard construction supplies include diameters ranging from 150 mm (minimum) to 2000 mm although, on request, larger sizes can be constructed.

The butterfly disc is constructed flat, with reinforcing ribs and is supported on two semi shafts. The flat disc system is sufficiently rigid for the operational pressures of these valves and it does not have significant losses.

#### Seal design



Swing-thru



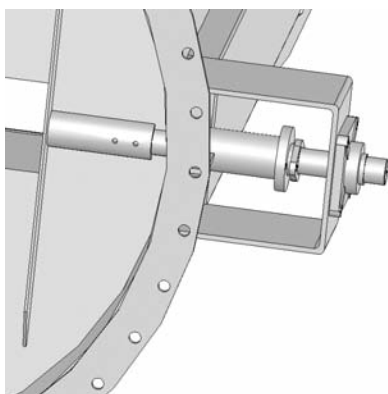
Step seat

The butterflies have two types of seal design. Depending on the application, the options are: swing-thru (closure from 90 to 97%) for environments with dust concentrations (less than 1000 mg/Nm<sup>3</sup>); and the step seat (closure of 99%) suitable for other applications requiring a high level of air tightness.

#### Bearings

**ORBINOX** supplies its butterflies with the bearings situated on the outside and separated from the packing. This way, they are kept away from sources of heat and corrosion, thus lengthening their useful life. This system also allows for the changing of the packing without

having to remove the bearing, which will make future maintenance tasks easier.



**Insulation**

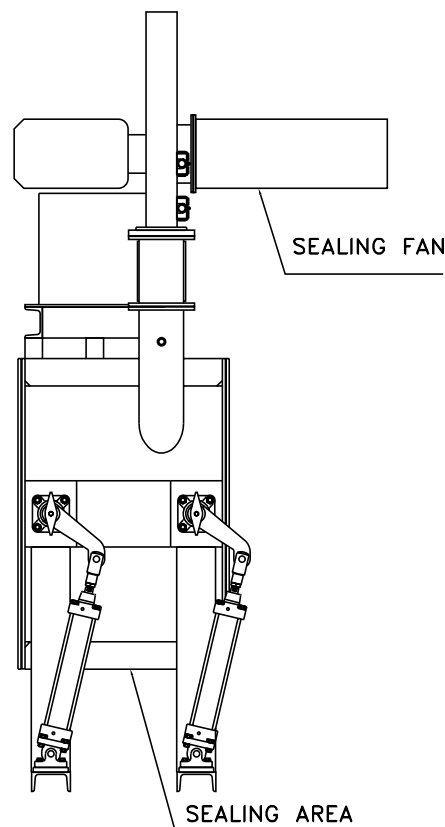
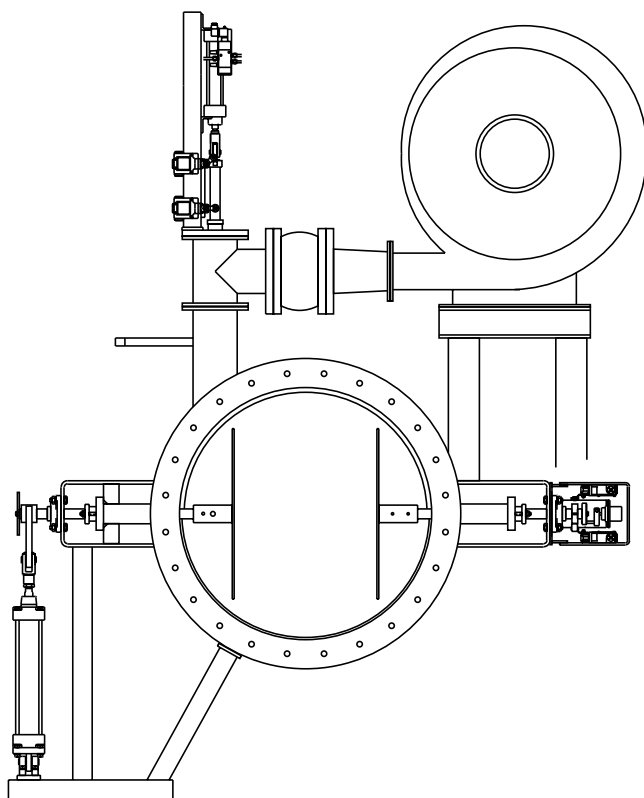
ORBINOX supplies its valves prepared for an outer insulation of 200 mm. A space has been left free in order to change bearings and packings in the future without the need to remove said insulation.

**BUTTERFLY DAMPER WITH SEALING SYSTEM (ML2)**

**Description**

The butterfly damper with sealing system is comprised of two butterflies. The seal is created in the space between these two discs, injecting ambient air at a higher pressure than that of the gases circulating in the conduits. The system creates a pressurised chamber which guarantees the air tightness of the valves on the conduit. This system is limited to conduit pressures of less than 250 mm of water column. This therefore guarantees the air tightness of the valve.

It has the following actuators: on/off pneumatic actuator, pneumatic actuator with regulation, and electric actuator. The sealing system is made up of an electroventilator, a sealing valve, a dilation compensator and a sealing pipe. The other characteristics are the same as the butterfly damper without sealing system.

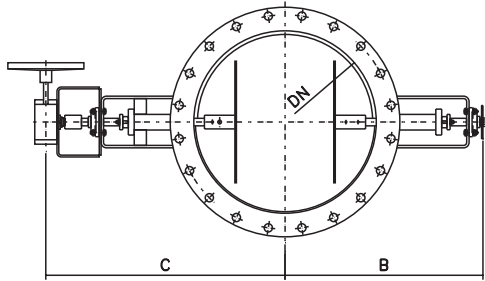


**MODEL**

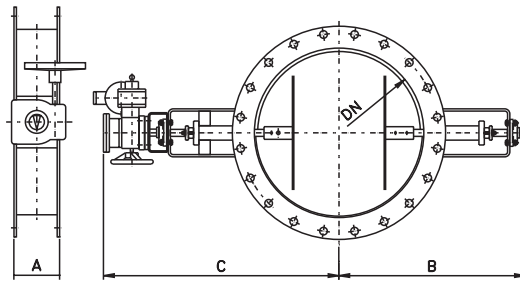
**ML**



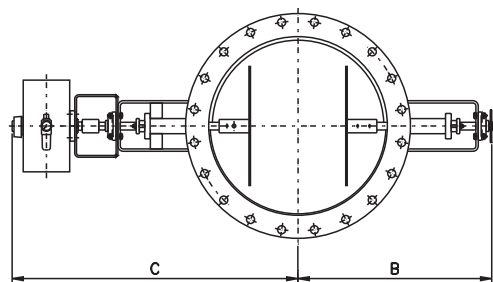
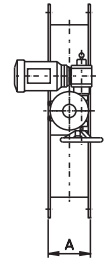
**APPROXIMATE DIMENSIONS**



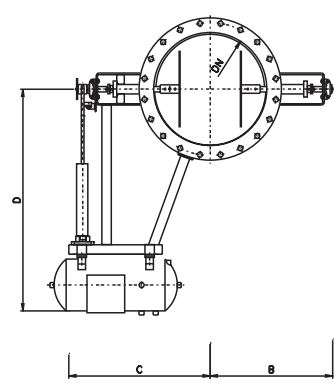
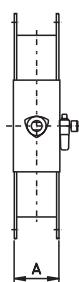
Manual actuator



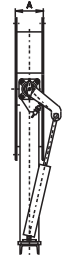
Electric actuator



1/4 turn pneumatic actuator



Linear pneumatic actuator



DN	A	B	MANUAL C	ELECTRIC C	PNEUMATIC C	PNEUMATIC C	LINEAR D
200	200	455	575	750	865	525	900
250	200	480	600	775	890	550	900
300	200	500	625	800	915	575	900
350	200	530	650	825	960	600	900
400	200	555	675	850	1011	625	900
450	200	580	700	875	1036	641	1100
500	200	596	725	900	1061	672	1100
600	200	643	775	925	1100	708	1100
700	200	712	825	950	1125	825	1199
800	200	796	875	1050	1185	900	1215
900	200	816	925	1150	1275	950	1230
1000	250	866	975	1180	1357	1038	1250
1200	250	973	1075	1340	1476	1050	1375
1400	250	1064	1175	1450	1583	1384	1410
1600	300	1180	1275	1592	1734	1425	1450
1800	300	1296	1375	1645	1823	1527	1502
2000	300	1420	1475	1750	1942	1615	1510

We reserve the right to change any data at any time depending on its criteria and without prior notice.

**OBX 02/13 EDITION 3**

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**ML-3**

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