



CMO VALVES
manufacturing the valve you need

51A SERIES



**INSTALLATION, MAINTENANCE AND
SECURITY MANUAL**

AIR RELEASE VALVES





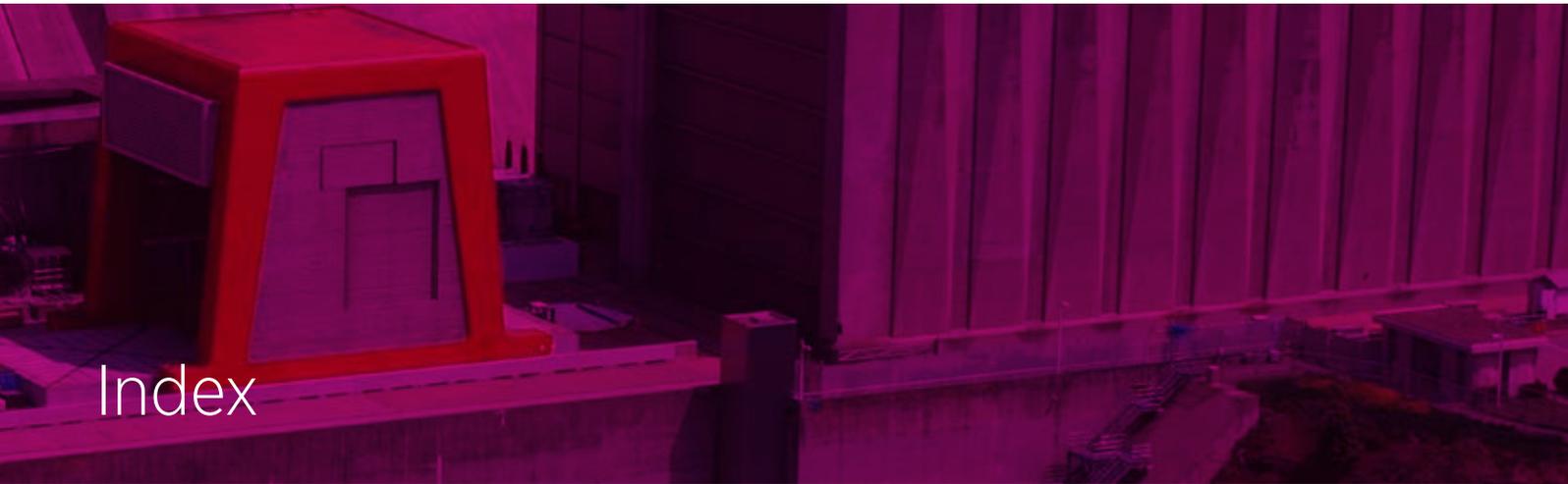
Range

This installation, maintenance and security manual includes the whole range of air release valves manufactured by CMO VALVES TECHNOLOGY S.L.

We will classify the air release valves according to the way they are joined to the main pipe, this is the only difference between them, as both models fulfill the same functions.

The air release valves manufactured by CMO VALVES TECHNOLOGY S.L. are triple function valves, this is, they allow great quantities of both air inlet and outlet, and they also eject the bubbles that could appear in the pipeline as the result of the flow of fluid.





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INTRODUCCIÓN

The CMO triple effect air release valves are designed to work with clean water, without solid waste floating in it. They are designed to allow great quantities of both air inlet and outlet, and they also eject the bubbles that could appear in the pipeline as the result of the flow of fluid.

This manual includes all the necessary details for the installation, use and maintenance of these valves. It is recommended to read the manual and get use to the valve before installing them.

The CMO air release valves are manufactured under a certified quality system ISO9001, assuring by this, the best characteristics, functioning and resistance.

The CMO air release valves are manufactured with high quality materials, according to the most important manufacturing standards.

The CMO air release valves are automatic valves, as they need no external actuation to fulfill their function, this fact must be considered when installing or doing a maintenance operation on them.



GENERAL PRECAUTIONS

The calculation for these valves must be done very carefully according to the conditions of the pipeline, if the valves are insufficiently dimensioned the consequences for the pipes could be catastrophic.

When installing, uninstalling or doing any maintenance operation on the air release valves, we will take into consideration all the existing circumstances in that moment, this means, both the environmental conditions as well as the technical circumstances of the place where the valve is going to be installed. We will take the next into consideration:

Installing security

The installation of the valves must be carried out by qualified and expert personnel, with the electrical and mechanical knowledge required.



When installing or repairing an equipment, disconnect all the devices or machines involved, checking previously that the disconnection will not mean a risk.

Before proceeding with the installation or reparation, remove the hydraulic or pneumatic pressure of the installation, devices, machines or the factory and empty the fluid of the pipeline.

Any necessary precautions will be taken so that the machinery of the pipeline is not started, this can be done by placing signals, cutting the electric supply, or any other considered action.

Check the applicable security and accident prevent regulations when the installation or maintenance is carried out.

Security during the start up

When starting the installation the air in the pipes will be ejected through the air release valve, we must make sure that there is nothing left in the pipes that could block up the air release valve when the water closes the valve.



In case of failure of the valve the next will be considered:

- The need or not of replacing immediately for a new valve.
- The need or not of dismantling the valve completely.
- The need or not of stopping the work in the factory, etc.

In the event of an incident, inform as soon as possible to the person in charge of the equipment, the safety engineer or the administrator to:

- Stop the devices, machines or energy of the factory.
- Install alarms if necessary to avoid:
 - The uncontrolled start of devices, machines or factory.
 - The start of production.

In case of detecting damage in the valve, isolate it from the device or machine. Check the security procedure before doing it.



Do not mount, act or do any adjustment in the valve, if the pipeline or the area of the factory where the valve is installed is damaged.

- After a reparation and/or maintenance, check the correct functioning of the valve and that the connections to the pipeline are correct.
- Check the functioning of the accessories that are installed.

Product security

The CMO air release valves are quality products, manufactured according to well-known industry standards and stored in perfect conditions by the manufacturer.



In order to keep those conditions, the installer or user will do their duty according to these instructions:

- The installer will be considered specialist with solid knowledge in mechanics and electricity.
- The air release valves will only be used in applications that correspond to the constructive characteristics of the valves.
- They will be used knowing the allowed temperature range.
- Never use the valve over the nominal pressure.
- No maintenance or reparation will be done on the valve without previously removing the pressure from the valve.

TRANSPORT AND STORAGE

It is recommended to transport the valves in closed containers. The holes of the flange will be used for handling operations, and the hand wheel can be used for those purposes in gate valves up to DN100.

The gate valves are packed with plastic. Please keep the original packing while the valves are stored.

The valves must be stored at a temperature between 0° y 30°, in dry and clean places.

If the valves are stored outdoor, the valves must be placed over wooden platforms or pallets, but they must never be in contact with the floor. In that case cover them with a plastic blanket.



INSTALLATION

The air release valves must be allocated in the higher parts of the pipeline, and as it as said before, they must be dimensioned according to the air flow that can be found in the technical data sheets.

The air release valves must be installed with a resilient seat gate valves, so they can be isolated from the pipeline to do maintenance or reparation. They will be installed in accessible places and with space enough to do the necessary works.

Once this considerations have been taken into account and being sure that the valve has been correctly dimensioned, we will proceed with the installation this way:

- We will clean the dust, rust and any other dirt from the flanges of the pipeline and the valve to assure that there is nothing left that can create a leaking point.
- We must choose the correct gaskets according to the fluid conducted, and the size and pressure of the valve.
- We must use the correct bolts, as it is stated in the standard ISO 7005-2, and as it is listed in the next table.

DN	PN10	PN16
50	M16X4	M16X4
65	M16X8	M16X8
80	M16X8	M16X8
100	M20X8	M20X8
125	M24X8	M24X8
150	M20x8	M20x8
200	M20x8	M20x12
250	M20x12	M24x12
300	M20x12	M24x12

- The tightening of the bolts must be done in cross section.
- The re-tightening of the bolts is recommened after some time of use of the installation, as the vibrations may have loosen them.

MAINTENANCE

The CMO air release valves require no specific maintenance.

AIR RELEASE VALVES

RANGE

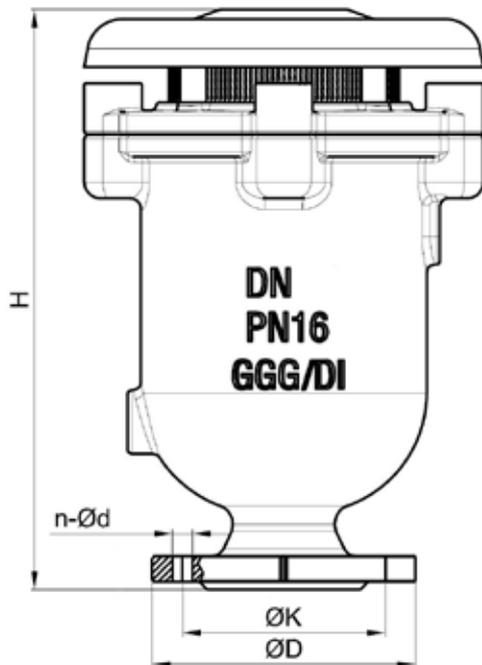
MODEL	NOMINAL PRESSURE	NOMINAL DIAMETER	FACE TO FACE DISTANCE	CONNECTION
SERIE - 51A Threaded	10/16/25 BAR	DN 20-50		Threaded
SERIE - 51A Flanged	10/16/25 BAR	DN 50-300		Flanged ISO 7005-2

MAIN FEATURES:

- 100% Water tight.
- Stainless steel purge.
- Full bore design.
- WRAS certificate for drinking water.
- Max. working pressure according to design pressure PN10/16.
- Working temperature between -10°C and 90°C.

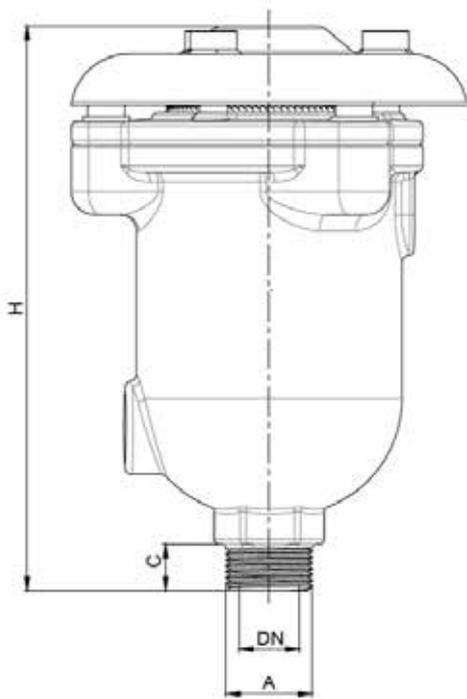
STANDARDS APPLIED:

- Hydrostatic tests according to EN 12266-1, class A.
- EC Directive.
- Construction according to EN 1074-4 and AWWA C512.
- Flange according to ISO 7005-2.



DIMENSIONS

DN	H	D			K			n-Ød		
		PN10	PN16	PN25	PN10	PN16	PN25	PN10	PN16	PN25
50	280	165	165	165	125	125	125	4-Ø19	4-Ø19	4-Ø19
80	362	200	200	200	160	160	160	8-Ø19	8-Ø19	8-Ø19
100	395	220	220	235	180	180	190	8-Ø19	8-Ø19	8-Ø23
150	485	285	285	300	240	240	250	8-Ø23	8-Ø23	8-Ø28
200	582	340	340	360	295	295	310	8-Ø23	12-Ø23	12-Ø28
300	750	445	460	485	400	410	430	12-Ø23	12-Ø28	16-Ø31

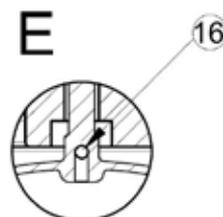
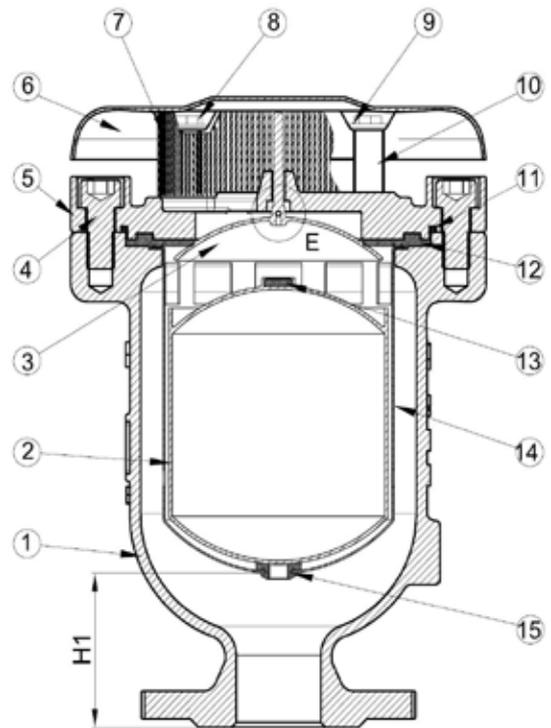


DIMENSIONS

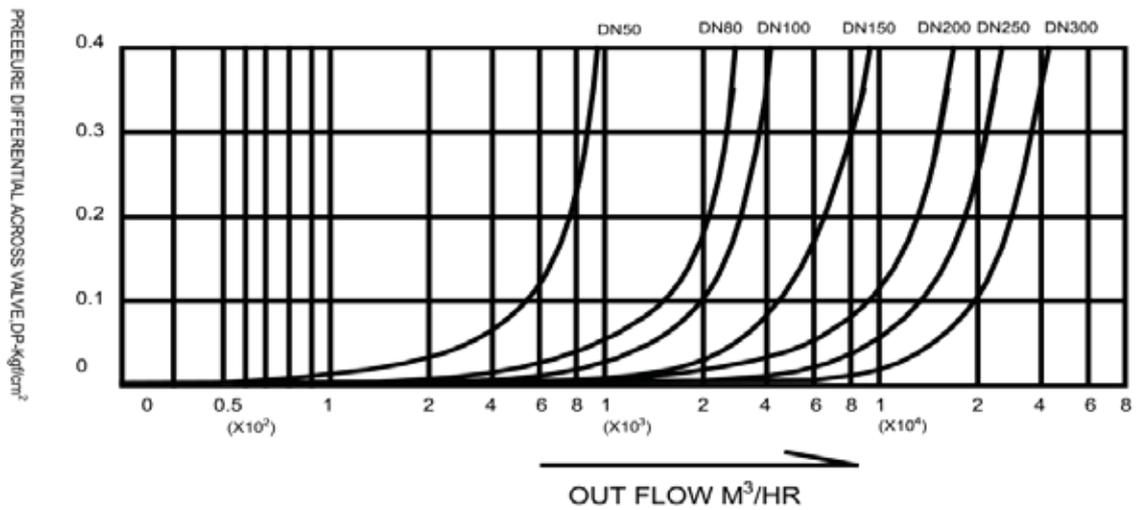
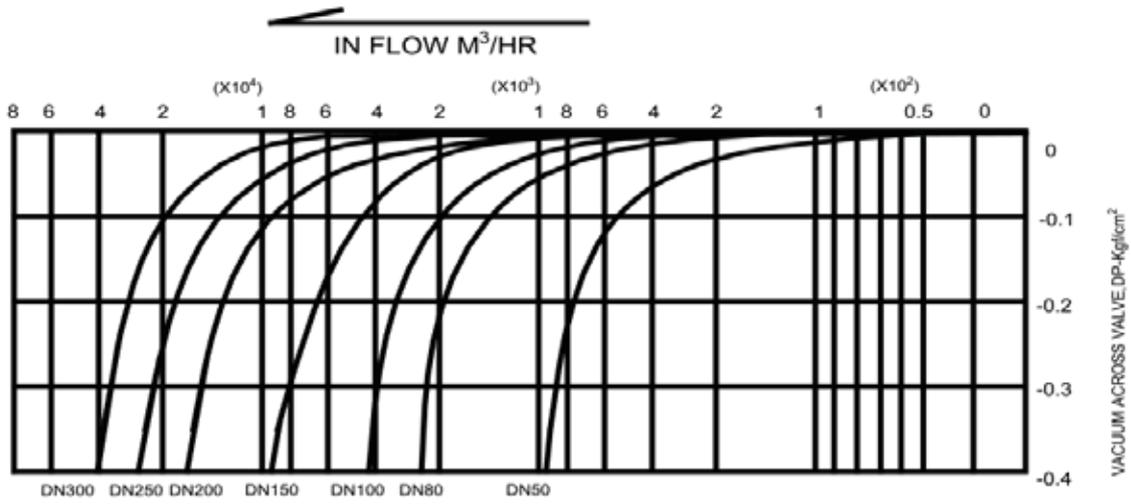
DN	H	A	C
20	243	G3/4"	20
25	243	G1"	20
32	243	G1 1/4"	20
40	243	G1 1/2"	20
50	243	G2"	20

DESCRIPTION:

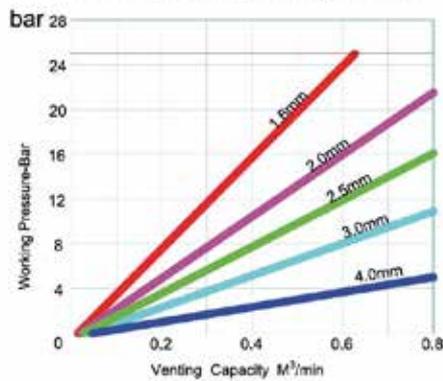
		MATERIAL
1	BODY	GJS500
2	FLOAT	AISI 304
3	SEALING ARC	AISI 304
4	BOLTS	ACERO 8.8
5	BONNET	GJS500
6	DEFLECTOR	STEEL Q235A
7	SCREEN	AISI 304
8	BOLTS	STEEL 8.8
9	WASHERS	STEEL 8.8
10	PILLAR	ALUMINUM
11	O-RINGS	NBR
12	SEAT	EPDM
13	PURGE SEAT	EPDM
14	GUIDE	AISI 304
15	SUPPORT	EPDM
16	PURGE	AISI 304
	PAINTING RAL 5015	Epoxy 250 µm



Air flow charts



Air release during working conditions



Purge orifice

DN	Ø orifice (mm)
25-50	1.6
80	2
100	2.5
150	3
200	4
300	4