

## SAFETY NOT RETURN VALVE - NRV METAL



The non-return valve is a safety system against the explosion of a very important component in the intake system. The protection of the working environment from the damage that can cause the explosion in the Filter, Silos or container of waste material from processing, depends mainly on the intervention of the non-return valve that completely blocks the pressure, and flame caused by the burst.

The closing speed of the diaphragm is very important, and the patented system by Aircom to balance the weight of the diaphragm with counterweights that release instantly with the arrival of the blast allows a closing time of 80-100 ms, and greatly reduces suction pressure drop. The danger of the explosion is always in relation to the danger and burst power of the material that is processed in the company, and in the processing of metal materials there are types of material that have a very high explosion coefficient KST and very high explosion effect, and this makes it easy to understand that the higher the sealing pressure of the non-return valve (**data from the KST Certification Test**) the less likely the explosion effect will reach the working environment. Aircom's METAL model has been tested and certified with Aluminium Powder, one of the materials with the highest KST explosion coefficient.

They are made of carbon steel painted standard RAL 3020, or stainless steel AISI 304 or AISI 316 A REQUEST, welded in all unions and reinforced structure to support high pressure. Equipped with flanges and counter-flanges compatible with DIN 24154-RI, except for Ø350-550-650-700 mm, and anti-opening safety block. A seal ensures the seal in the closed position. Equipped with support slots for the Ø400÷550 mm.

## CERTIFICATE

CERTIFICATED ATEX EN-16447 ST3

CE 1370 EPT 21 ATEX 4514 X  II D



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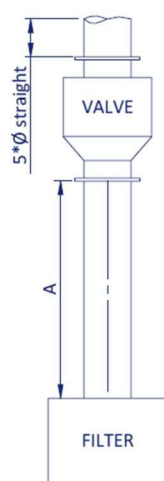
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## TECHNICAL DATA

- Pipe: Horizontal
- Working Temperatures Ta: da -20°C a +60°C
- Flux type: suction flow
- Dust type: metallic or non-metallic
- Maximum air speed: 30 m/s
- ATEX Class: 3
- KST<sub>max</sub>: 400 bar m/s
- P<sub>max</sub>: 9,9 bar
- MIE: 2 mJ
- MIT: 540°C
- Installation in the presence of bends: see picture below

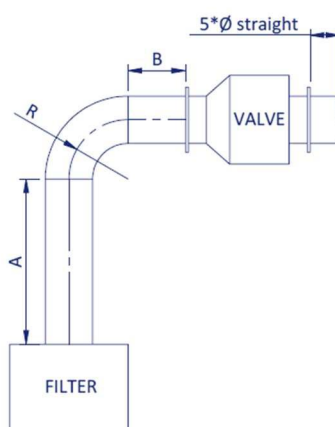
EQUIVALENT LENGTH CALCULATION  
(STRAIGHT DUCT)  
For Ø200÷400 and Ø550



$$L = A$$

$$L_{min} < L < L_{max}$$

EQUIVALENT LENGTH CALCULATION  
(WITH ONE ELBOW)  
Only for Ø200÷400

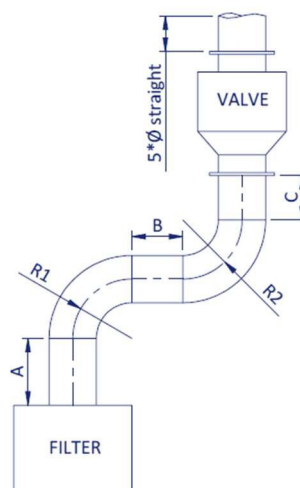


$$L = A + R * \frac{\pi}{2} + B$$

$$L_{min} < L < L_{max}$$

Note:  
The dimensions A or B or both can be also = 0

EQUIVALENT LENGTH CALCULATION  
(WITH TWO ELBOWS)  
Only for Ø200÷400



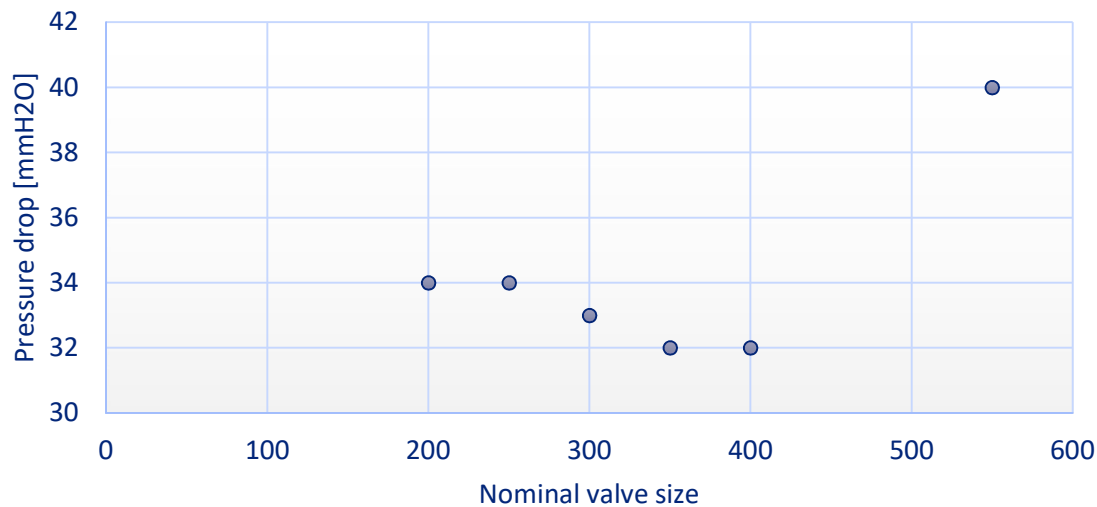
$$L = A + R1 * \frac{\pi}{2} + B + R2 * \frac{\pi}{2} + C$$

$$L_{min} < L < L_{max}$$

Note:  
The dimensions A, B, C or all them can be also = 0

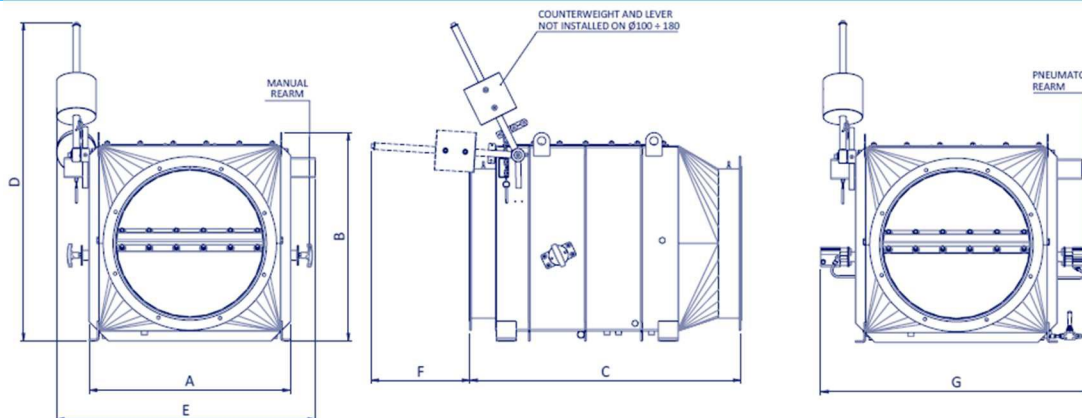
Ø [mm]	Instalation with stright pipe	Installation with bends	L <sub>min</sub> [m]	L <sub>max</sub> [m]	V <sub>min</sub> [m³]	P <sub>red, max</sub> [bar/psi]	Pressure drop [mmH <sub>2</sub> O]	Vessel minimum volume[m³]
200	✓	✓	3	5	1,2	1.0/14.5	34	1.2
250	✓	✓	3	5	1,2	1.0/14.5	34	1.2
300	✓	✓	3	5	1,2	1.0/14.5	33	1.2
350	✓	✓	3	5	1,2	1.0/14.5	32	1.2
400	✓	✓	3	5	1,2	1.0/14.5	32	1.2
550	✓	✗	3,5	5	2,5	0.6/8.7	40	2.5

Pressure drop at 20 m/s



## DIMENSIONS

Ø [mm]	Weight [kg]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Rearm
200	31	360	360	575	590	510	125	575	Manual
250	38	410	410	625	640	560	125	625	Manual
300	48	460	460	675	690	610	125	675	Manual
350	58	510	530	725	740	660	125	725	Manual
400	68	560	580	775	790	710	125	775	Manual
550	112	710	730	925	1065	880	255	925	Pneumatic



## ACCESSORIES ON REQUEST

- Other materials: Stainless Steel AISI 304 or AISI 316
- Pneumatic rearm (Ø550 already supplied)



- ⊙ Silicone gasket
- ⊙ Capacitive sensor for dust detection at the bottom of the valve:

Characteristic	SENSCAP-NRVQ	SENSCAP1-NRVQ	SENSCAP2-NRVQ
Output	Namur	Namur	Namur
Working Distance [mm]	0 ÷ 3	1 ÷ 6	1 ÷ 15
Working Voltage [V]	7 ÷ 12	5 ÷ 15	7.5 ÷ 15
Degree of protection	IP68	IP67	IP 65

- ⊙ Micro switch for feedback on shutter status:

Characteristic	Micro 000317	Micro 000366	Micro 000907
Number of contacts	1 NO + 1 NC	1 NO + 1 NC	1 NO + 1 NC
Working voltage [V]	400	400 Vac \ Vdc	250 Vac \ Vdc
Current [A]	3	10	6
Number of wires	4+1	4.1	4+1
Degree of protection	IP67	IP67	IP66

- ⊙ Cleaning system:



The purpose of the cleaning system is to clean the bottom of the valve in such a way as to prevent the passage material from settling and may compromise the closure of the device in an emergency.

The system connected to the compressed air network consists of 2 to 4 nozzles that release compressed air for about 5 seconds (min 6 bar). The release is automatic with a cadence of 10 minutes.

Both duration and frequency can be adjusted according to specific needs. The supply voltage is 24V-DC