

**VIGILEX<sup>®</sup>**  
SAFETY PROTECTION By **STiF**

**VIGIFLAP<sup>®</sup>**

EXPLOSION ISOLATION VALVE





## VIGIFLAP® EXPLOSION ISOLATION VALVE

### APPLICATIONS

The VigiFLAP is a non-return valve designed to prevent overpressure or flame caused by a downstream explosion (dust collectors, filters, cyclones...) to propagate in the piping system.

The valve is held open by a lever arm. It can be used both at the entrance and at the exit of the filter. This allows to isolate the filter from an explosion or an overpressure.

In case of explosion, the valve closes and remains locked preventing the progress of the flame. The unlocking of the flap is done manually.

### STANDARD CHARACTERISTICS

- Body: Painted steel
- Flap: Round domed flap: Stainless steel
- Diameter: ø160mm to ø800mm
- EPDM FDA Gasket:  
-30°C to +70°C / -22°F to 158°F
- Flanges: ISO and ANSI flanges design
- Inductive Sensor: Non ATEX closing indication sensors in case of explosion or overpressure

### CERTIFICATIONS

INERIS 19ATEX0016 X

EN 16447

EN 15089

NFPA 69



### OPTIONS for VigiFLAP

- Body: Metallic steel (zinc protection)
- Body: Stainless steel
- Gasket silicone FDA and 1935/2004 CE: -10°C to +180°C / 14°F to 356°F
- Counter-flange
- ATEX 21 closing indication sensors
- Capacitive sensor to warn dust accumulation (max: 70°C / 158°F)
- Connection box installed on the body, opposite side of the locking mechanism



## Explosion isolation valve **dimensions:**

**VIGIFLAP<sup>®</sup>**



### SIZES & DISTANCE INSTALLATION

|            | DN (mm) | DN (inch) | Minimum Vessel Volume | L Min *<br>Min Mounting Distance | L Min+2m **<br>Min Mounting Distance | L Max<br>Max Mounting Distance |
|------------|---------|-----------|-----------------------|----------------------------------|--------------------------------------|--------------------------------|
| VIGIFLAP Ø | 160     | 6"        | 0,70m <sup>3</sup>    | 4,0m                             | 6,0m                                 | 17m                            |
| VIGIFLAP Ø | 160     | 6"        | 1,35m <sup>3</sup>    | 3,0m                             | 5,0m                                 | 17m                            |
| VIGIFLAP Ø | 180     | 7"        | 0,70m <sup>3</sup>    | 4,0m                             | 6,0m                                 | 17m                            |
| VIGIFLAP Ø | 180     | 7"        | 1,35m <sup>3</sup>    | 3,0m                             | 5,0m                                 | 17m                            |
| VIGIFLAP Ø | 200     | 8"        | 1,35m <sup>3</sup>    | 4,6m                             | 6,6m                                 | 17m                            |
| VIGIFLAP Ø | 250     | 10"       | 1,35m <sup>3</sup>    | 4,0m                             | 6,0m                                 | 17m                            |
| VIGIFLAP Ø | 300     | 12"       | 2,90m <sup>3</sup>    | 4,6m                             | 6,6m                                 | 17m                            |
| VIGIFLAP Ø | 350     | 14"       | 2,90m <sup>3</sup>    | 4,2m                             | 6,2m                                 | 17m                            |
| VIGIFLAP Ø | 400     | 16"       | 4,50m <sup>3</sup>    | 5,2m                             | 7,2m                                 | 17m                            |
| VIGIFLAP Ø | 450     | 18"       | 4,50m <sup>3</sup>    | 4,7m                             | 6,7m                                 | 17m                            |
| VIGIFLAP Ø | 500     | 20"       | 6,05m <sup>3</sup>    | 5,8m                             | 7,8m                                 | 17m                            |
| VIGIFLAP Ø | 550     | 22"       | 6,05m <sup>3</sup>    | 5,5m                             | 7,5m                                 | 17m                            |
| VIGIFLAP Ø | 600     | 24"       | 7,65m <sup>3</sup>    | 7,2m                             | 9,2m                                 | 17m                            |
| VIGIFLAP Ø | 650     | 26"       | 7,65m <sup>3</sup>    | 6,7m                             | 8,7m                                 | 17m                            |
| VIGIFLAP Ø | 700     | 28"       | 7,65m <sup>3</sup>    | 6,4m                             | 8,4m                                 | 17m                            |
| VIGIFLAP Ø | 750     | 30"       | 10,00m <sup>3</sup>   | 7,3m                             | 9,3m                                 | 17m                            |
| VIGIFLAP Ø | 800     | 32"       | 10,00m <sup>3</sup>   | 6,9m                             | 8,9m                                 | 17m                            |

\* ■ Floating in horizontal position:  
Flap valve activated by the working air flow

\*\* ■ Vertical position  
■ With elbows  
■ Flap valve kept open by its spring blade system



Flap valve test with INERIS notified body

### TECHNICAL INFORMATION

|         |                      |                     |                 |                  |                                                        |
|---------|----------------------|---------------------|-----------------|------------------|--------------------------------------------------------|
| Kst max | ≤250bar.m/s          | Pred max *          | ≤0.5bar         | Air flow speed   | Clean air side : ≤ 30 m/s<br>Dirty air side : ≤ 45 m/s |
| Kst min | No limit             | VIGIFLAP Resistance | 2.0bar          | Working          | Air + dust circuit<br>Clean air circuit                |
| Pmax    | 10bar<br>145 psi     | Marque ATEX         | II D            | Air flow range   | Pull flow<br>Push flow                                 |
| MIE     | ≥ 10mJ               | Atex inside         | Zone 20 (II 1D) | Working pressure | 500mbar max                                            |
| MIT     | ≥ 400°C<br>≥ 752°F   | Dust **             | All dusts kinds | Working vacuum   | -800mbar max                                           |
| MESG    | 1,7 mm<br>0.067 inch | Dust concentration  | No limit        | Elbow quantity   | No limit                                               |

\* Vessel (potential explosion source)

\*\* Organic dust, synthetic dust and metal dust

**Features** of the explosion isolation valve:

**VIGIFLAP®**

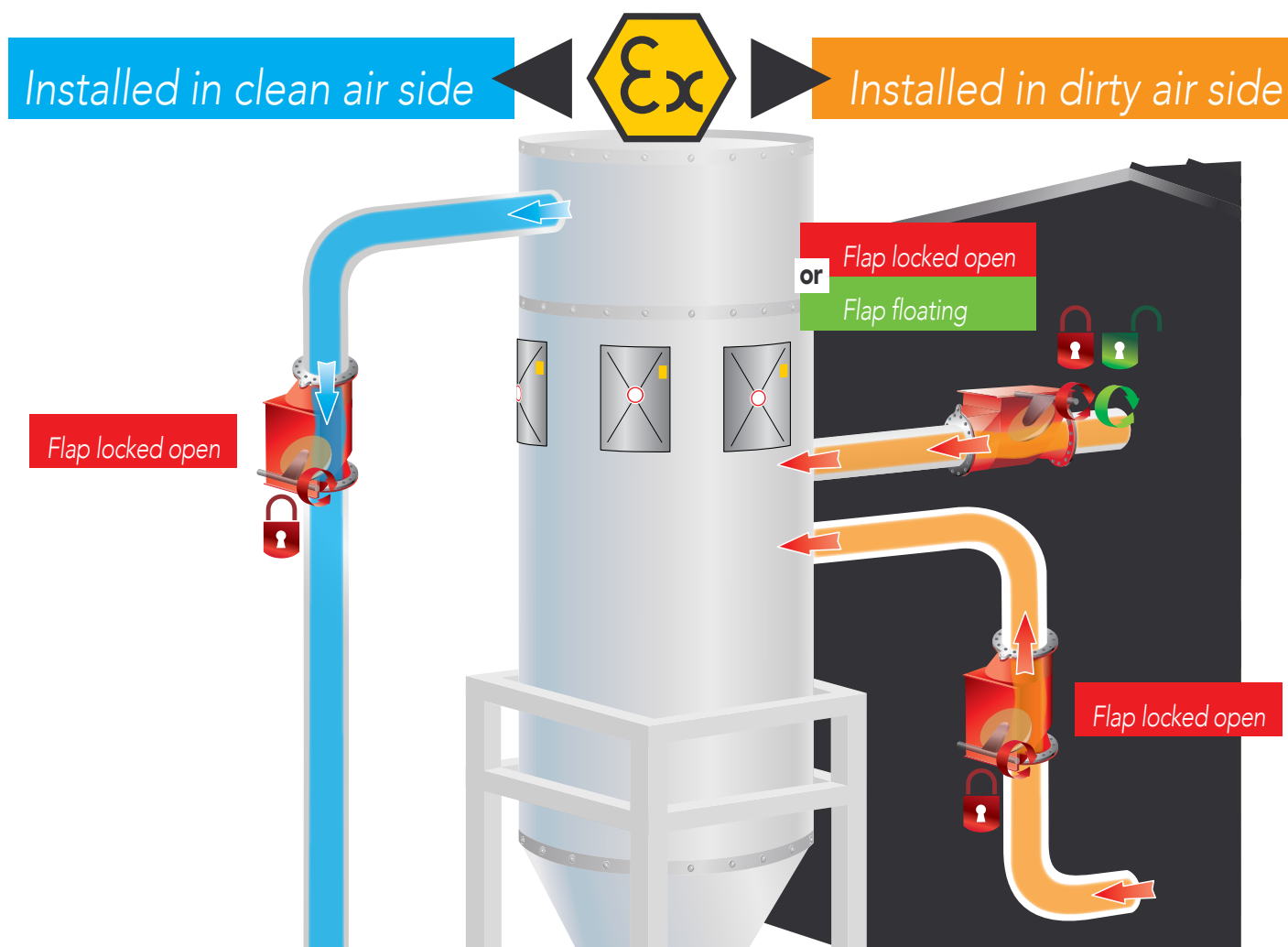


## NON DUST ACCUMULATION DESIGN

THE ALIGNMENT OF THE LOWER PART OF THE VIGIFLAP WITH THE PIPING, ALLOWS THE AIR FLOW TO CREATE A CONTINUOUS SELF-CLEANING, WITH LOW PRESSURE DROP



**LOW PRESSURE LOSS**



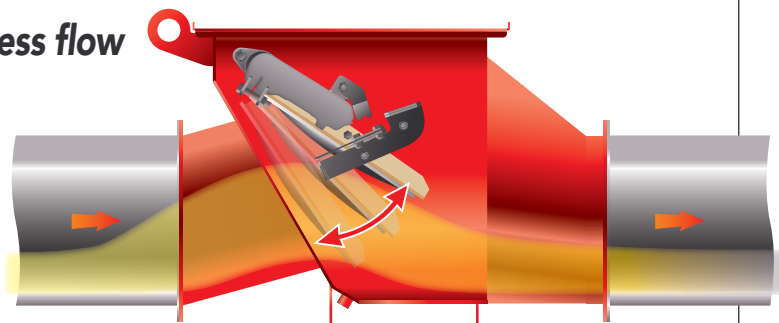
## Process flow positions:

VIGIFLAP<sup>®</sup>  

### PRODUCT PROCESS FLOW

**1** Flap is held open by process flow

INSTALLATION  
WITH  
FLOATING FLAP



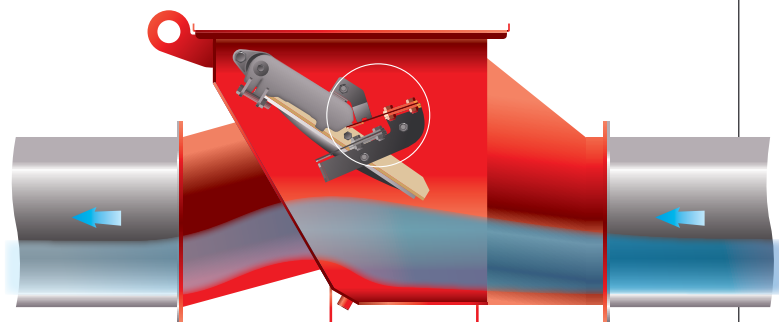
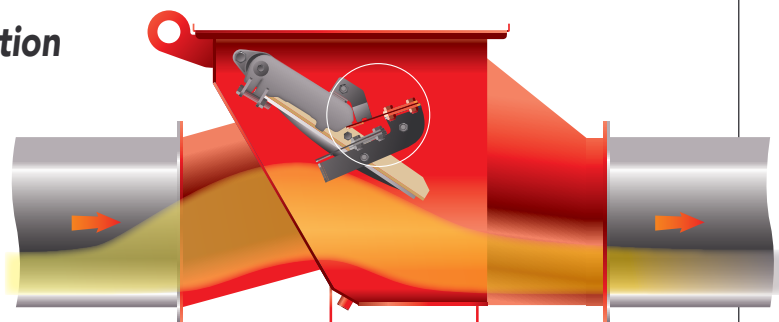
**2** Flap locked in open position

INSTALLATION  
WITH FLAP  
LOCKED OPEN

Locked  
open flap for  
dirty airside

OR

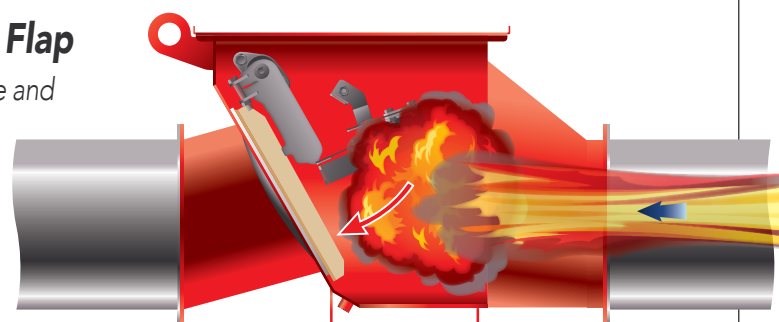
Locked  
open flap for  
clean airside



### DURING AN EXPLOSION EVENT

#### **Floating Flap or Locked Open Flap**

Flap is closed by the explosion pressure wave and locked in place. Manual locking mechanism reset is required.

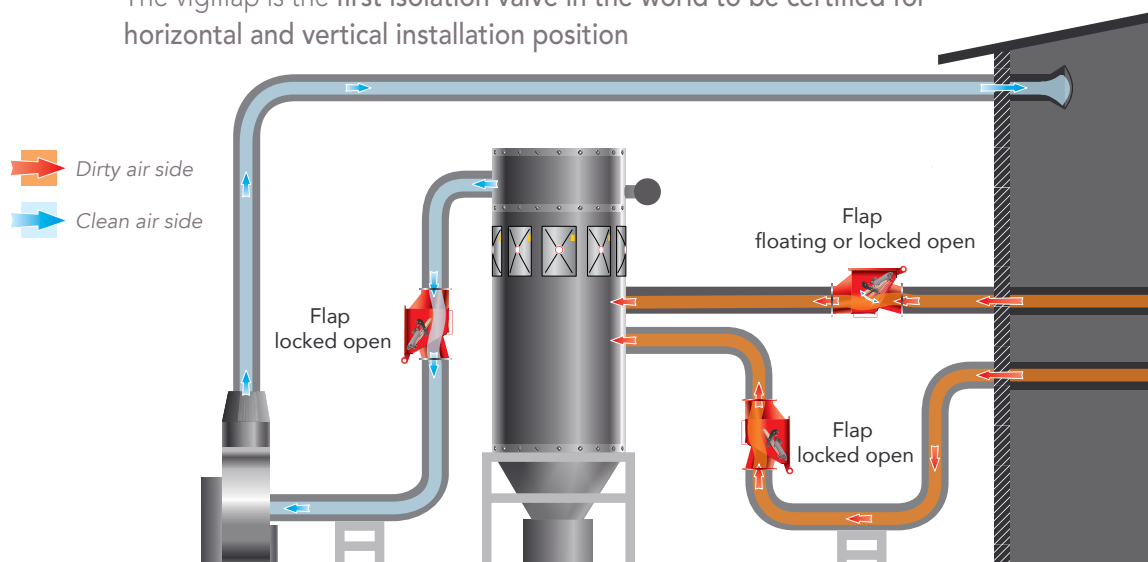


## Positions and pressure drop curves:

**VIGIFLAP®**  

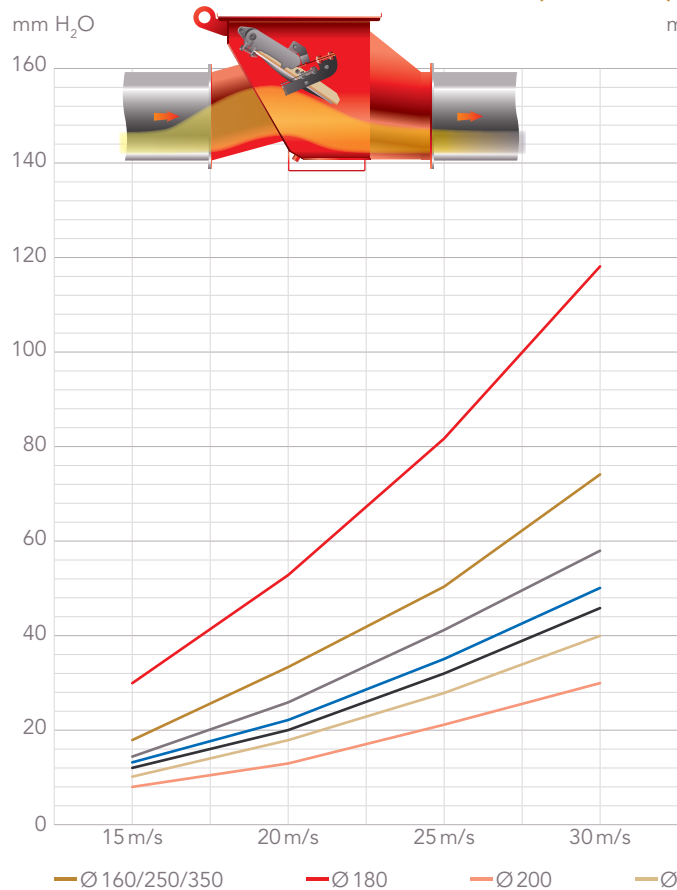
### VIGIFLAP POSITIONS

The vigiflap is the first isolation valve in the world to be certified for horizontal and vertical installation position

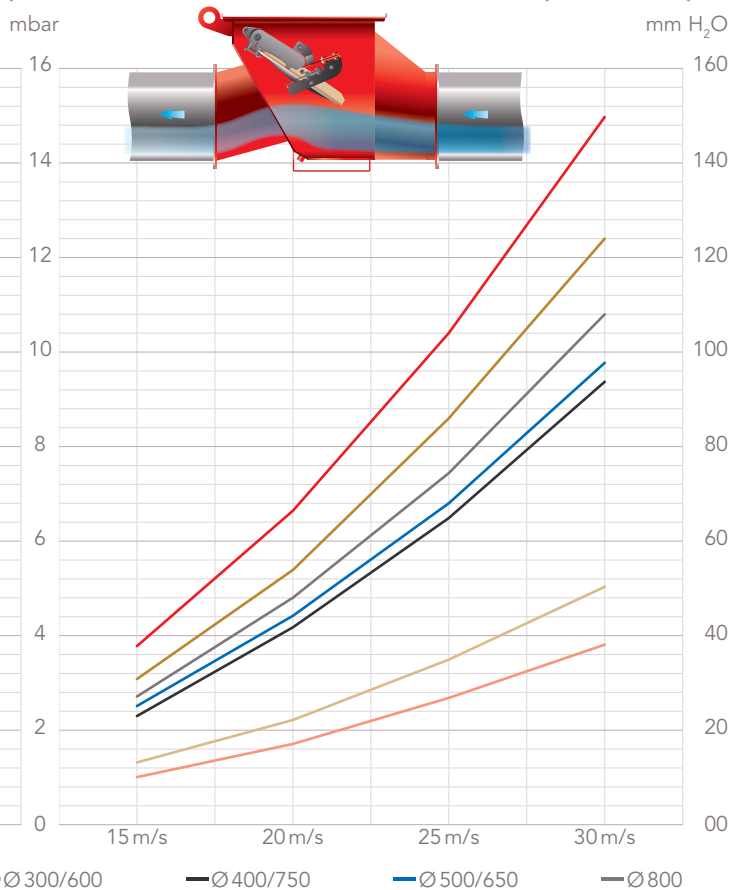


### PRESSURE DROP CURVES

#### PRESSURE DROP/IN FLOW PROCESS (DIRTY AIR)



#### PRESSURE DROP/REVERSE PROCESS (CLEAN AIR)



## Certification:



## INERIS 19ATEX0016X



### HIGH CERTIFICATION TEST

To get our Atex certificate (N° INERIS 19ATEX0016X) according to the standard EN16447: 2014, we carried out our explosion tests in the most extreme conditions and as close as possible to the reality of the use of the product, with for example:

- **Protected Zone Pipeline :**  
All test carried out with a pipeline after the flap (picture 1).
- **Flap locked open :**  
Automatic release of the valve by the pressure of the explosion
- **Floating flap :**  
During the test the flap valve is held fully open until the appropriate time of release.
- **Vent panel on test vessel :**  
No open ports were used during test but vent panels were always used.

## CERTIFICATIONS

### EXPLOSION ISOLATION VALVE

- 2014/34/UE
- EN 16447: 2014
- EN 15089: 2009
- EN 1127-1: 2019
- EN 14460: 2018
- NFPA 69: 2019
- INERIS 08ATEXQ406
- ISO 9001: 2015

### SOON:

In few months our VIGIFLAP certificate will be improved with the following additional features Atex certified:

- **Size until diameter 1370 mm**

10 m³ vessel  
(All dust Kst 250 bar.m/s)

VigiFLAP Ø800

The test and approval must reflect the intended use, in combination with a pipe.



(Picture 1)



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