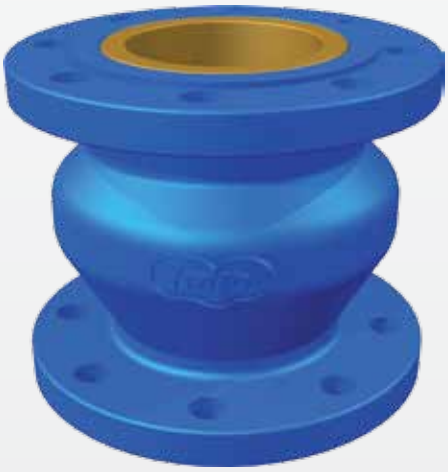
# Figure 2840

**DN80-DN400 PN10-16-25**

# Slow Closing Valve



## DESCRIPTION

The slow closing valve is recommended to be installed at the air valve inlet during the filling.

The design prevents the valve from slamming when closed which can cause "water hammer" and the resultant noise and damage to piping systems.

This valve is recommended to be installed at high points where water column separations or pipelines collapses may occur.

If the liquid speed is above 3 mt per second, the water hammer and therefore the float against the seat can easily damage the valve. The same happens to deep well turbine pumps where the speed is too high and can easily exceed 3 mt. per second.

Fluid

Clean water, consult operations and materials for ocean water, and processed crude water

## CONSTRUCTION MATERIALS / COATING

**Body**: Ductile Iron EN GJS-500-7
**Internal Mechanisms**: Stainless steel and bronze
**Upper protection**: Steel with screen in stainless steel
**Bolting**: Internal in stainless steel A2 / External in galvanized steel
**Coating**: Non-toxic epoxy for drinkable water. Internal and External 200 microns thickness

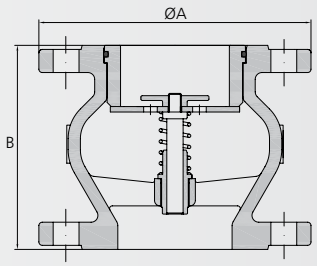
Other material and special coating available upon request

## TECHNICAL DATA / ENGINEERING

| TEST PRESSURE | BODY | SEAT |
|---|---|---|
| PN 10 | 15 bar | 11 bar |
| PN 16 | 24 bar | 18 bar |
| PN 25 | 38 bar | 28 bar |

## GENERAL DIMENSIONS AND WEIGHTS

| DN | Connection | A | B | Weight |
|---|---|---|---|---|
| DN80 | Flange | 200 | 150 | 14 |
| DN100 | Flange | 220 | 184 | 18 |
| DN150 | Flange | 285 | 248 | 33 |
| DN200 | Flange | 340 | 318 | 54 |
| DN250 | Flange | 420 | 400 | 88 |
| DN300 | Flange | 515 | 362 | 129 |
| DN350 | Flange | 560 | 388 | 362 |
| DN400 | Flange | 637 | 549 | 479 |




Dimensions in mm and weights in kgs
Connections: PN10-16-25 s/EN -150# s/DIN

## ORDERING OPTIONS

- With disc generally open (NA)
- With disc generally closed (NC)

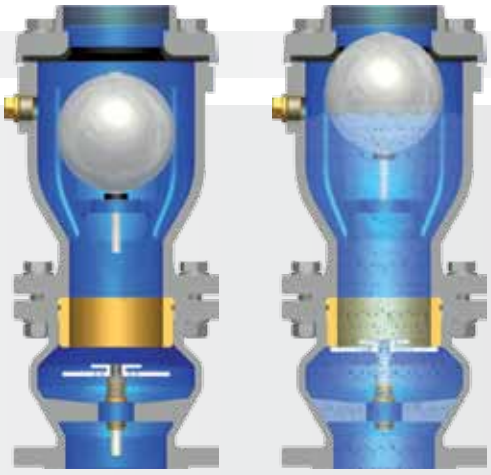
## FULFILLED STANDARDS

- EN 1074-1 & EN 1074-4
- AWWA C512

## SEQUENCE OF FUNCTIONS

This valve is specially designed to minimize water hamming in those systems where the working conditions are irregular and the valves are continuously opening and closing. In particular in those high points where the hydraulic gradient and the line conditions allow negative pressures or in those lines where the speed is 3,5 m/seg or even more.

If the liquid speed is above 3 mt per second, the water hammer and consequently the float against the seat can easily damage the valve. The same happens with deep well turbine pumps where the speed is too high and can easily exceed the mentioned 3 mt. per second.



# Figure 9330

## 1”-2”-3”-4”-6” PN10-16-25

# Deepwell Service Air Vacuum Valve

## DESCRIPTION

The deepwell service air/vacuum valve shall employ the Kinetic principle to automatically exhaust controlled quantities of air at pump start-up and to allow air to re-enter during draining or when a negative pressure occurs. Valves are designed to exhaust air up to sonic velocity without blowing shut. Valve shall be completed with a throttle device installed on the outlet to allow control of the air discharge rate and pressure and column ascent rate.

Specially recommended in high points where the hydraulic gradient and the service conditions allow uninterrupted negative pressure.

If the liquid speed is above 3 mt per second, the water hammer and therefore the float against the seat can easily damage the valve. The same happens to deep well turbine pumps where the speed is too high and can easily exceed 3 mt. per second.

Fluid

Clean Water. Consult operation and materials for sea water, raw water, etc.

## CONSTRUCTION MATERIALS / COATING

**Body** : Stainless steel A-316
**Internal Mechanisms**: Stainless steel A-304 in bronze and brass
**Seat** : Elastomer NBR/EPDM
**Bolting**: Internal stainless steel A2 / External in galvanized steel

Other material and special coating available upon request

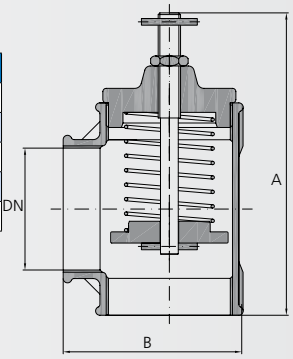
## TECHNICAL DATA / ENGINEERING

| TEST PRESSURE | BODY | SEAT |
|---|---|---|
| PN 10 | 15 bar | 11 bar |
| PN 16 | 24 bar | 18 bar |
| PN 25 | 38 bar | 28 bar |

## GENERAL DIMENSIONS AND WEIGHTS

| DN | Connection | A | B | Weight |
|---|---|---|---|---|
| 1” | F Thread | 125 | 55 | 8 |
| 2” | F Thread | 180 | 95 | 12 |
| 3” | F Thread | 250 | 135 | 30 |
| 4” | F Thread | 300 | 160 | 50 |
| 6” | F Thread | 420 | 225 | 95 |

Dimensions in mm and weights in kgs




## FULFILLED STANDARDS

- EN 1074-1 & EN 1074-4
- AWWA C512

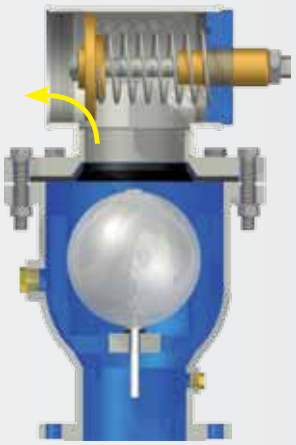
## SEQUENCE OF FUNCTIONS

These Valves with restricted access use the kinetic principle to extract controlled amounts of air during the startup of the pump and allow air inlet during the stopping of the pump.

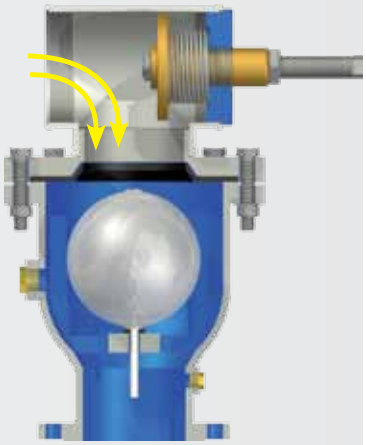
The control of the air output is carried out by means of a flow restrictor in the output of the valve. It is equipped with a system of adjustment of free flowing air that generates the restrictor, which will lower the speed when the fluid ascends the column of aspiration and therefore lowing the water hammer when the ball float closes by flotation of the fluid.

It is recommended to carry out the first tests during the installation with the restrictor closed as much as possible to evaluate gradually possible water hammer.

When the pumps stop the negative pressure permits the retrictor disc to withdraw from its original position creating a surface of entrance that is equivalent to the diameter of the valve (full bore).



Close regulation of valves



Open regulation of valves