

*Technologically,
Advanced, Yet Economical!*



HIGH PERFORMANCE KINETIC AIR RELEASE VALVE

Model: ARVGN / ARVNS / ARVEF



INSTALL AND FORGET...

**Saves Every Drop of
Water & Energy**



- Tamper Proof
- Maintenance Free
- No Leakage
- Stainless Steel Floats



*Quality, At It's
Best Always...!*

tdkchemtrol.com

TDK Kinetic Air Release Valve is combination of Kinetic air valve along with Automatic air valve are used more commonly in water or irrigation schemes Sewage & effluent treatment Plants to ensure that any entrained air in the water system is automatically released in order to maximize the system performance and Safety.



Features: Tamper Proof, With Stainless Steel Balls, Double Ball, Double Orifice, Air Release and Anti-vacuum

Selection of Valve Size: The Air Valve size can be selected 1/5 of the diameter of the main pipe for quick sizing as a thumb rule.

THE RECOMMENDED VALVE SIZES ACCORDING TO PIPE DIAMETER IS GIVEN BELOW:

Pipe Dia. mm	80 - 250	300 - 400	450 - 550	600 - 1200	1250 - 2400	Above 2400
Valve dia. mm	50/80	80/100	100/150	150/200	200	200+200

TYPES/ MODELS OF KINETIC AIR RELEASE VALVE



HIGH PERFORMANCE STANDARD KINETIC AIR RELEASE VALVES (ARVGN)

These are Standard Kinetic Air Release Valves used for venting Air /De vacuuming Water Pipe Lines ensuring uniform consistent flow and prevents collapsing of pipes.

Application: To be installed where the layout of water pipe is simplified and horizontal without much of turns and no vertical peaks and dips.

Recommended to be installed every half kms of the Piping

Size Range: 50, 80, 100, 150 & 200 mm

HIGH PERFORMANCE NON-SLAM KINETIC AIR RELEASE VALVES (ARVNS)

In High pressure water lines spreaded in long distances, Piping having multiple Vertical Peaks and Dips, no. of bends and isolation valves causes immense pressure surges/ water hammer or negative pressure at location where there is column separation and rejoining. This leads to increase in pressure at times more than 3 to 4 times line pressure / water column head leading to premature failure of Pipes, Valves and other Joints.

TDK Non Slam Kinetic Check valve is ideal Valve for these applications as it performs the role of standard Air release Valves and has an additional engineered design to release small pockets of air to the atmosphere in controlled manner dampening the high velocity of air flowing through the air vents created due to column separations.

Recommended to be installed immediately after the check Valve near the Pump and thereafter at every peaks within 2-3 kms span of the piping.

Size Range: 80, 100, 150 & 200 mm



HIGH PERFORMANCE KINETIC AIR RELEASE VALVES SEWAGE/EFFLUENT (ARVEF)

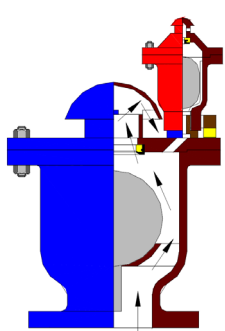
These are Kinetic Air Release Valves with extended long Conical Body self-cleaning type primarily used in Sewage/Effluent lines having sediments along with water, working principal is similar to Std Kinetic Air Release Valve.

The Long body ensures that the orifice sealing area will not come in contact with sewage water before it get sealed. These valves are generally made in S.S. material.

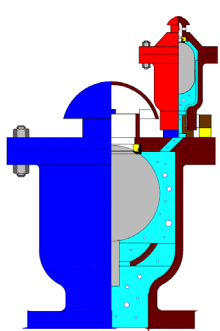
Recommended to be installed every half kms of the Piping in single or as cluster of 2 to 3 nos.

Size Range: 80, 100, 150 mm

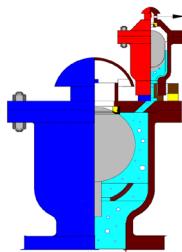
WORKING PRINCIPLE OF STD KINETIC AIR RELEASE VALVE (ARVGN)



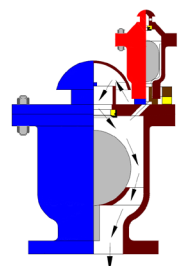
While charging the water pipe line, the air is released through big orifice. This ensures the prevention of air lock in the pipe line.



As soon as the water is filled in the pipe line the steel balls get lifted due to buoyancy and both the orifices are closed without any leakage of water.

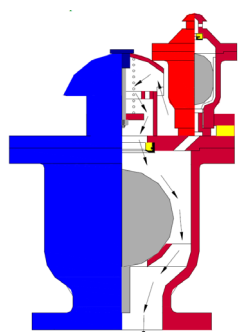


Under pressure the dissolved air slowly accumulates & forms big air pockets due to change in hydraulic gradient, area, temperature etc. These air pockets accumulate at top of automatic air release valve and lowers the water level. As water level goes down the small steel ball oval shaped with rolling seal mechanism falls down and releases the air without any leakage of water. As soon as the air pocket is released water level comes up and small orifice is closed. This eliminates the pressure drop due to air pockets in the pipe line.

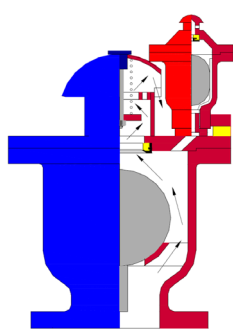


On shutdown when the water is drained from pipe line, pressure inside goes below atmospheric pressure. Hence vacuum begins to develop at this moment the big ball falls down in to the Valve body bucket and the air is breathed in. This prevent formation of vacuum and avoids collapsing of pipes .

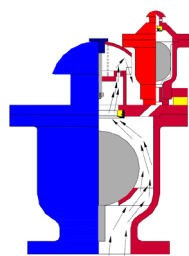
WORKING PRINCIPLE OF NON SLAM AIR CUSHONED KINETIC AIR RELEASE VALVE (ARVNG)



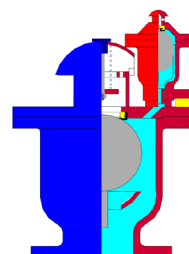
While column separation in the water pipe line, the air is admitted through big orifice.



While column rejoining in the water pipe line, initially at low velocity, the air is released through big orifice.

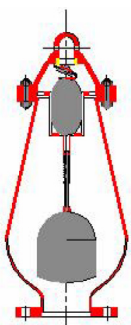


While column rejoining in the water pipe line, at higher velocity in the later stage, the large orifice closes at a pre-setted pressure of 0.1 Kg/ Sq.cm and thereafter air is released through small orifice. This phenomena induces a high air resistance dampening inside the pipeline and thus reduces the velocity of water column

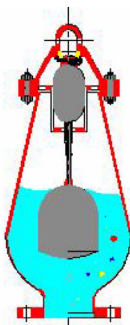


After column is rejoined in the water pipe line, the large ball seals the large orifice. This prevent the water hammer due to water column rejoining while pump shut down or power failure at peaks of the pipe lines.

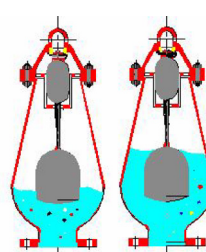
WORKING PRINCIPLE OF SEWAGE /EFLUENT KINETIC AIR RELEASE VALVE (ARVEF)



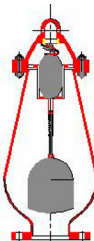
While charging the sewage water pipe line, the air is released through big orifice.



As soon as the sewage water is filled in the pipe line the steel balls get lifted due to buoyancy and both the orifices are closed without any leakage of water. This ensures no air lock in the pipe line. Also it ensures that the orifice sealing area will not come in contact with sewage water before it get sealed.



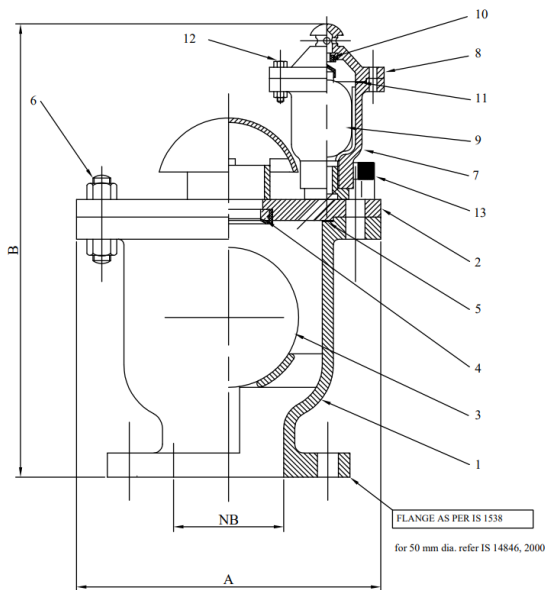
After charging, under pressure the gases evolved from the sewage water accumulate inside the air valve chamber and lowers the liquid level. Hence the buoyant force on the large ball is reduced resulting in the downward travel of the ball thus releasing the excess gas evolved, by opening small orifice with the help of rolling seal. As soon as the volume of gas is reduced, the ball get lifted again by buoyant force leading to closure of small orifice.



On Shutdown, pressure inside the pipe line goes below atmospheric pressure vacuum begins to develop at this moment the big ball falls down and the air is breathed in. This prevent formation of vacuum and avoids damage to pipelines and other equipments.

SAILENT FEATURES

- Compact and light weight design.
- Balls made in Stainless steel & does not get damaged, no maintenance & no spares required.
- Aerodynamic design integral bucket type, ball rest. Hence high velocity air discharge cannot initiate premature closure.
- Tamper proof Air Vent ensuring no water thefts.
- Oval shaped small float with rolling seal mechanism ensures less spilling of water and even releases air under higher pressure.
- Tamper proof protection cover, hence do not require extra cage.
- 100% sealing at very low pressure, Large orifice seals at less than 0.2 Kg/Cm² .Small orifice seals at less than 1 Kg/Cm².
- Complete Breath in & breathe out of Air, so no Air locking / de-vacuum preventing Pipe Bursting & Pipe Collapsing.
- Gives maximum flow of water at outlet of pipe.
- Automatic Air Release Valve is with rolling seal mechanism to ensure release of air under pressure without leakage of water.



ITEM NO	PART NAME	MATERIAL
KINETIC VALVE		
1	Body	Cast Iron Is 210 Gr Fg 260
2	Cover	Mild Carbon Steel Is2062 Gr. A
3	Float	Stainless Steel Aisi 304
4	Nozzle / Orifice	G.m (85/5/5)With Neoprene Rubber
5	Gasket	Neoprene Rubber
6	Bolts & Nuts	H.t. Steel Astm A 193 Gr B7 & 194 Gr 2h
AUTOMATIC AIR VALVE		
7	Body	Cast Iron Is 210 Gr Fg 260
8	Cover	Cast Iron Is 210 Gr Fg 260
9	Float	Stainless Steel Aisi 304
10	Orifice & Rolling Seal	G.m (85/5/5)With Neoprene Rubber
11	Gasket	Neoprene Rubber
12	Stud & Nut	H.t. Steel Astm A 193 Gr B7 & 194 Gr 2h
13	Lock	Cast Iron Is 210 Gr Fg 260

Pressure Class: PN10, PN16

Flanges:

IS 1538, BS10 - TABLE D, E, F
ANSI B16.5 CL-150, DIN PN-10

Design Std: AWWA C 512

Testing Std: AWWA C 512 / IS 14845

VALVE SIZE NB	OVERALL DIAMETER (mm)	OVERALL HEIGHT (mm)
50	180	310
80	220	355
100	276	415
150	325	460
200	385	520

TESTING OF KINETIC AIR RELEASE VALVES

Low pressure sealing large orifice at 0.2 Kg/Sq Cm small orifice at 1.35 Kg/Sq.cm for 3 Min. no leakage tight shutt off.

High pressure sealing at 10 Kg/Sq.cm. for 3 Min. no leakage tight shutt off.

Air release test at 10 Kg/Sq.cm for 3 Mins and should release air at same pressure.

Shell test at 15 Kg/Sq.cm for 5 Min. and should not have leakage.



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