Gamma HP Triple Effect Air Vent for Mining Slurry and Sewage

Revolutionary Design: how it works

Bleeding and Venting Air Vent, Gamma HP ™ Combination kinetic air release valve provide 3 functions in one:

1. Large air release during filling of the pipeline
2. Small air release under pressurized pipeline
3. Large air intake during draining of the pipeline

General Description

Gamma HP™ represents the state of the art in Air Vent Triple Effect made for Slurry. It is a new generation of Air Vent Design with a single body plus two independent orifices. The float Stem and Body keep the valve venting mechanism as free from contact with the sewage as possible. The float hangs freely in the valve body and responds instantaneously to the fall and rise of the sewage media due to the float. You no longer need to dig deeper trenches or build deeper vaults because Gamma HP™ is at least 30% shorter than other equivalent air vent.

Gamma™ HP air vent is designed for most severe conditions, including slurry, sewage, and sea water. Common uses are desalination process, sea water, chemical waste, sand pulp, dewatering sewage, mining slurry, general pulp, and treatment plants.

Revolutionary Design: how it works

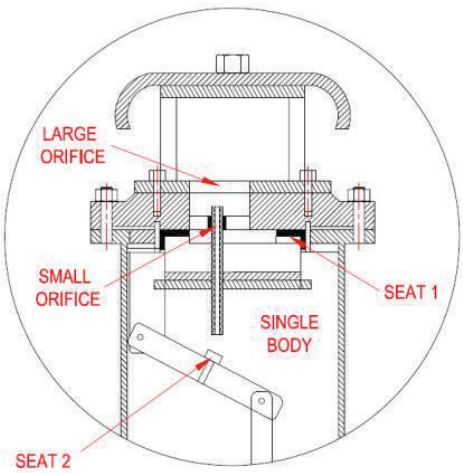
When fluid enters to the valve, it rises, forcing air out ahead of it. Then as slurry or sewage reaches the float, it raises the float and float stem instantly, due to the very sensitive impact zone. This fast action closes the Venting Mechanism, trapping the remaining air in the valve body. This entrapped air is initially at atmospheric pressure but it's compressed after the venting mechanism closes, and sewage continues rising in the valve, until air and sewage are the same pressure. The slurry stops rising, leaving the venting mechanism free from contamination. Additional gases given off by the sewage rise into the valve body, displacing and lowering the sewage level until the float drops, opening the venting mechanism allowing gases to escape. Sewage again rises to occupy the space vacated by the escaped gas, lifts the float and closes the venting mechanism. This cycle is repeated frequently as air and gas collect in the valve without spillage or spurting, due to the sensitivity of the float.

Revolutionary Design: Two independent orifices

Large orifice: for air out and in air Vacuum Valve function Small orifice: for air release under pressure function.

Gamma HP Air Vent (Single Body, Double Orifice) to allow large volumes of air to escape or enter through the larger diameter orifice when filling or draining a pipeline.

When the pipeline is filled and pressurized the large air/vacuum orifice shall stay closed, but the smaller diameter air release orifice shall remain operative and open to allow small pockets of air accumulation to escape automatically and independently of the large orifice. The large air/vacuum orifice shall shut off when the free floating-center guided plug is raised into the orifice by the lifting force of the float. The large orifice shut-off shall be "Without Spilling".



Revolutionary Design: no spilling

Piping professional can tolerate reasonable spilling from Air Vents made for clean water, but slurry and sewage... That "nasty stuff" is cause for some Engineers and Users alike to avoid use of Sewage Air Valves, regardless of need to a system. During the past 30 years, the single most highly objection and complaint about Air Vents made for Slurry and swage were, "it spills" or "it spurts sewage". The revolutionary Gamma HP design eliminates the problem because of the unique Impact zone extremely sensitive to sewage media entering the Sewage Air Valve. The impact zone causes instantaneous and upward movement of the float to shut-off the discharge orifice as soon as media contacts the float. Now, no spilling or spurting occurs even with low pressure below 20 ps.

PTV® Solutions

Features:

A) Suitable for extreme conditions: Slurry pipelines, waterlines, sewage and so on.
B) Body made in A105 Forged Steel painted with epoxy paint.
C) Full bore design to prevent clogging.
D) Reduces pressure drop.
E) Trim (Float, Stem, and Hinge) made in super stainless steel A276 SS316L
F) Can be microscale venting.
G) Easy and quick maintenance
H) Anti-water hammer

Technical Data

1. Size range Flange : NPS 2"~8"
   Threaded : NPS 1"~2"
2. Pressure ratings: 150LB / 300LB / PN16
3. Working temperature: -29°C~ +150°C
4. Suitable Medium: Slurry / Sea Water/ Sewage
5. Body Material: ASTM A216 WCB
   SS304 / A351 CF8
   SS316 / A351 CF8M
   SS316L / A351 CF3M
6. Trim Material: A276 SS316L
7. Seat 1: PTFE Seat 2: Viton

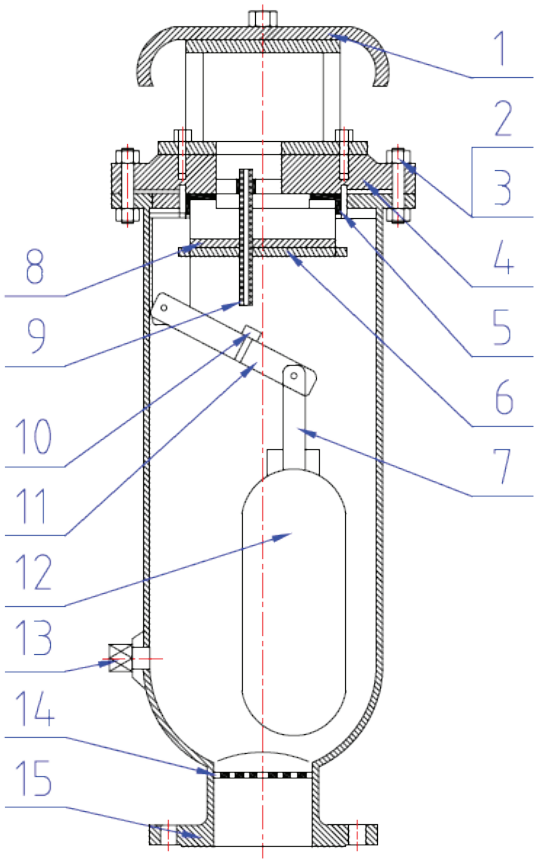
Performance Standard

1. Design & Manufacture standart as to: ASME B31.3
2. Height dimension (H) standard as to: MFR-STD
3. Flange dimension conforms as to: ASME B16.5 / BS EN 1092
4. Threaded Standard as to: NPT : ASME B1.20.1
5. Testing And Inspection as to: API 598
6. Pressure-temperature conforms as to: ASME B16.34
7. Anti Corrosion as per NACE MR-0175(2002) require ment

Part List:

Gamma HP Part List: Flanged Ends

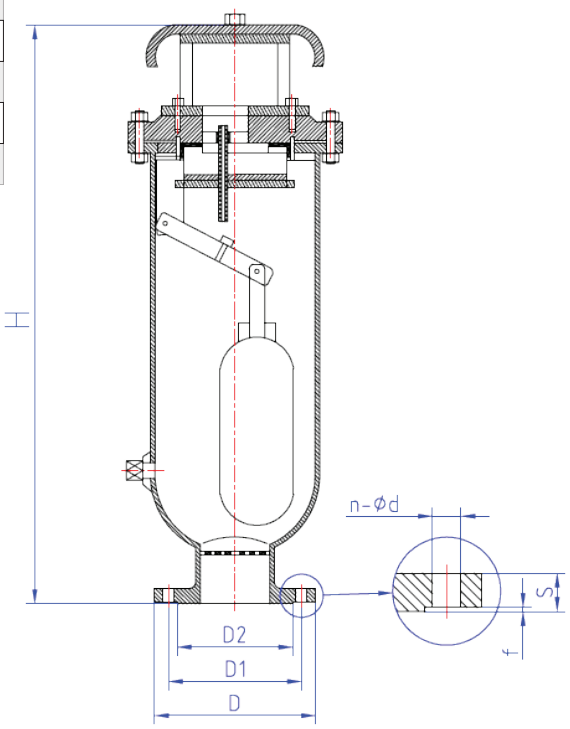
No.	Part Name	Material	Standard
1.	Cap	Carbon Steel	AISI 1025
		SS304 / SS316 / SS316L	ASTM A276
2.	Bolt	SS304 / SS316	ASTM A193 Gr. B8 / B8M
3.	Nut	SS304 / SS316	ASTM A194 Gr. 8 / 8M
4.	Cover	Carbon Steel	ASTM A105
		F304 / F316 / F316L	ASTM A182
5.	Seat 1	PTFE	USA DuPont
6.	Disc	SS316L	ASTM A276
7.	Stem	SS316L	ASTM A276
8.	Disc Retainer	SS316L	ASTM A276
9.	Nipple	SS316L	ASTM A276
10.	Seat 2	Viton	USA DuPont
11.	Hinge	SS316L	ASTM A276
12	Float	SS316L	ASTM A276
13.	Drain Plug	Carbon Steel	ASTM A105
		F304 / F316 / F316L	ASTM A182
14.	Buffer plate	SS316L	ASTM A276
15.	Body	Carbon Steel	A216 WCB
		SS304 / SS316 / SS316L	ASTM A351



Gamma HP Main Dimensions: Flanged Ends

Class 150LB RF
Flange dimension standard conforms as to: ASME B16.5

NPS	H	D	D1	D2	S	N-Φ	f	Weight (Kg)
2"	490	150	120.7	92	17.5	4-Φ19	2	25.5
3″	600	190	152.4	127	22.5	4-Φ19	2	46
4"	760	230	190.5	157	22.5	8-Φ19	2	47.5
5"	860	255	215.9	186	22.5	8-Φ22	2	56
6"	860	280	241.3	216	24	8-Φ22	2	60
8"	1010	345	298.5	270	76	8-Φ22	2	86



Class 300LB RF
Flange dimension standard conforms as to: ASME B16.5

NPS	H	D	D1	D2	S	N-Φ	f	Weight (Kg)
2"	490	165	127	92	21	8-Φ19	2	28
3″	600	210	168.3	127	27	8-Φ22	2	50
4"	760	255	200	157	30.5	8-Φ22	2	55
5″	860	280	235	186	33.5	8-Φ22	2	65
6"	860	320	269.9	216	35	12-Φ22	2	68
8"	1010	380	330.2	270	40	12-Φ25.5	2	95

DIN PN16 RF
Flange dimension standard conforms as to: BS EN 1092

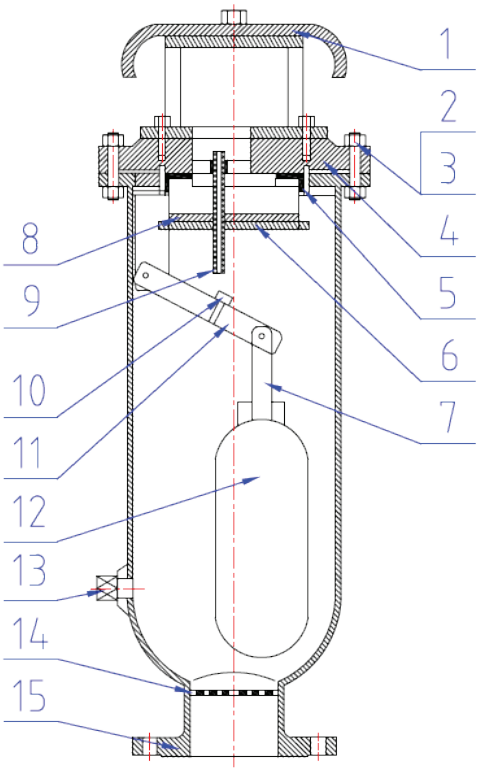
DN	H	D	D1	D2	S	N-Φ	f	Weight (Kg)
DN50	490	165	125	99	20	4-Φ18	3	25.5
DN80	600	200	160	132	22	8-Φ18	3	46
DN100	760	220	180	156	24	8-Φ18	3	47.5
DN125	860	250	210	184	24	8-Φ18	3	56
DN150	860	285	240	211	26	8-Φ23	3	60
DN200	1010	340	295	266	30	12-Φ23	3	86

PTV® Solutions

Part List:

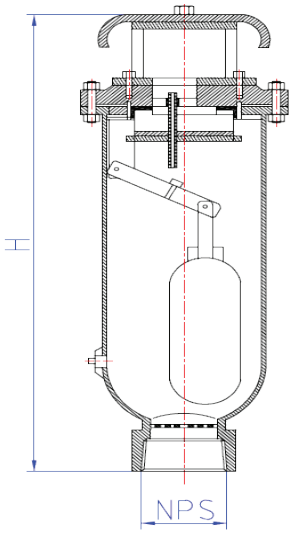
Gamma HP Main Dimensions: Thread NPT

No.	Part Name	Material	Standard
1.	Cap	Carbon Steel	AISI 1025
		SS304 / SS316 / SS316L	ASTM A276
2.	Bolt	SS304 / SS316	ASTM A193 Gr. B8 / B8M
3.	Nut	SS304 / SS316	ASTM A194 Gr. 8 / 8M
4.	Cover	Carbon Steel	ASTM A105
		F304 / F316 / F316L	ASTM A182
5.	Seat 1	PTFE	USA DuPont
6.	Disc	SS316L	ASTM A276
7.	Stem	SS316L	ASTM A276
8.	Disc Retainer	SS316L	ASTM A276
9.	Nipple	SS316L	ASTM A276
10.	Seat 2	Viton	USA DuPont
11.	Hinge	SS316L	ASTM A276
12	Float	SS316L	ASTM A276
13.	Drain Plug	Carbon Steel	ASTM A105
		F304 / F316 / F316L	ASTM A182
14.	Buffer plate	SS316L	ASTM A276
15.	Body	Carbon Steel	A216 WCB
		SS304 / SS316 / SS316L	ASTM A351



Gamma HP Main Dimensions: Thread NPT

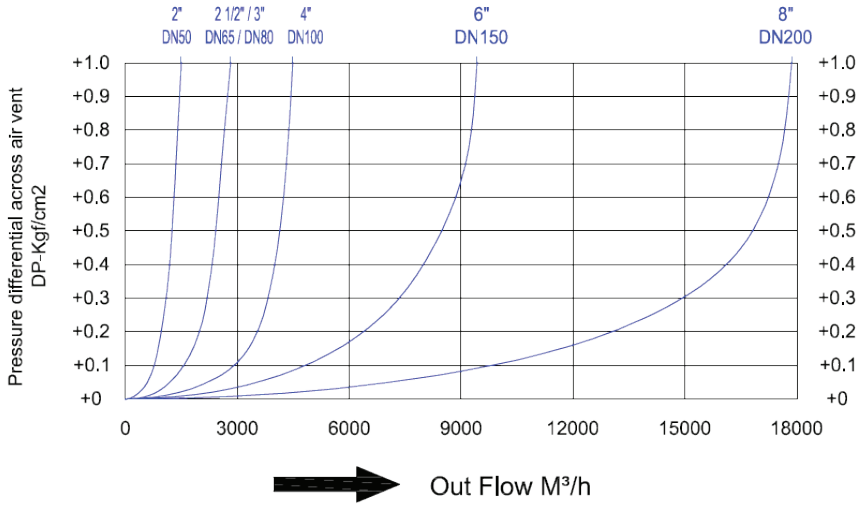
NPS	NPT	H	Weight Kg		
			150LB	300LB	PN16
1"	1"	490	20	22	20
1 1/4"	1 1/4"	490	22	23.5	22
1 1/2"	1 1/2"	490	23	24.5	23
2"	2"	490	24	26	24



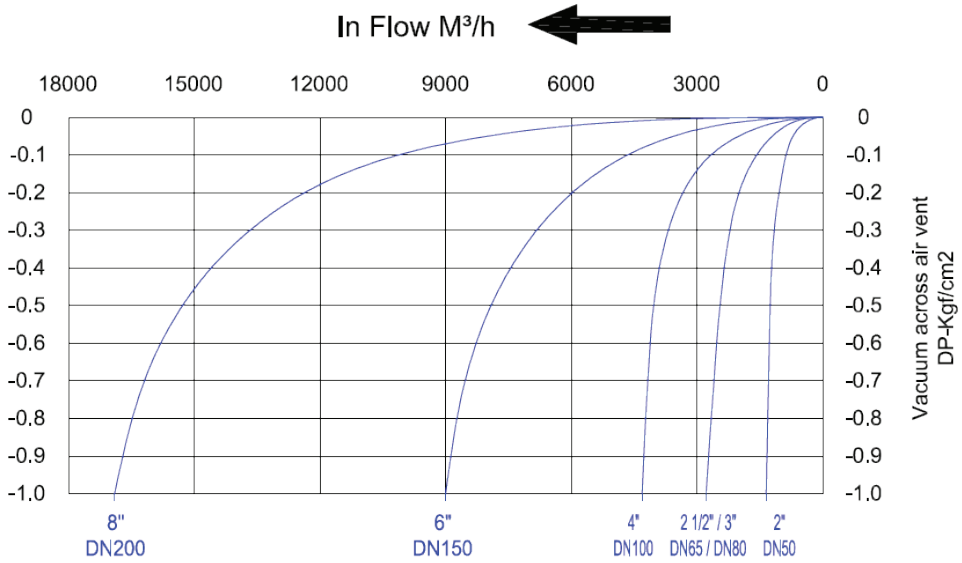
PTV® Solutions

Gamma HP ™ Graphics and charts for Flanged Model

Gamma HP™ Discharge flow rate capacity, by size:

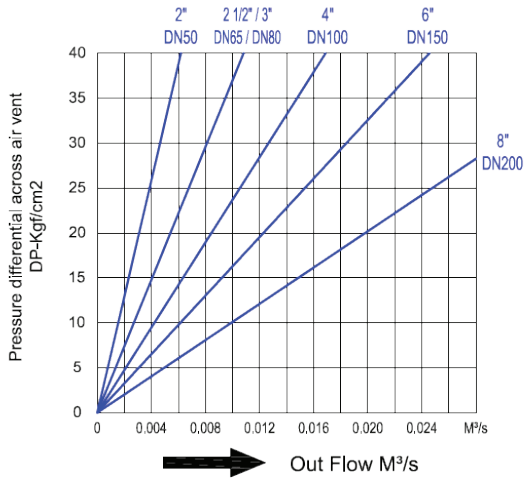


Gamma HP™ vacuum flow rate, by size:



PTV®
Solutions

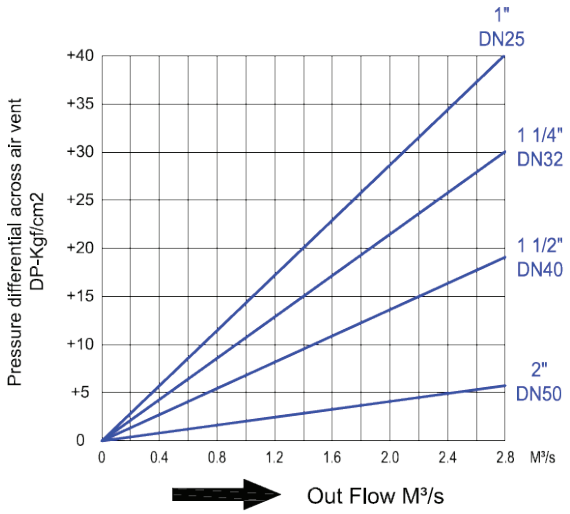
Gamma HP™ automatic air flowing out capacity, at high pressure, by size:



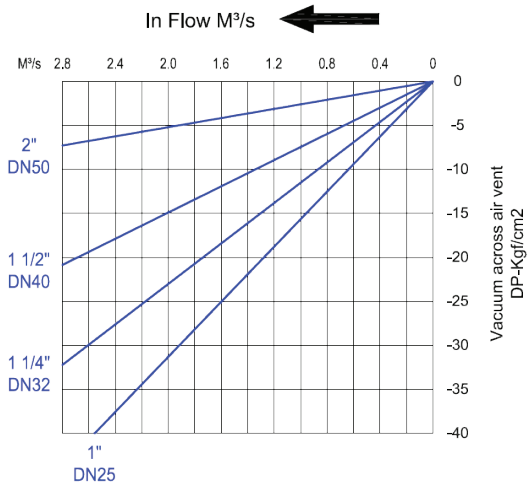
Air Release During Working Conditions
Small orifice

Gamma HP™ Graphics and charts for Thread NPT Model

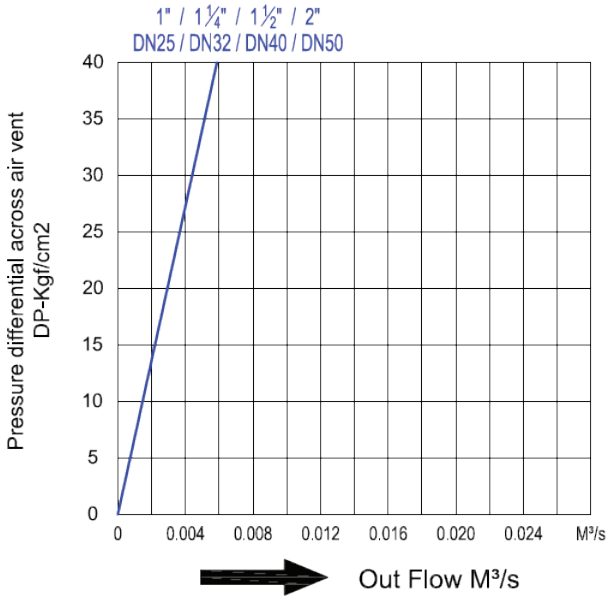
Gamma HP™ Discharge flow rate capacity, by size:



Gamma HP™ vacuum flow rate, by size:



Gamma HP™ automatic air flowing out capacity, at high pressure, by size:



Air Release During Working Conditions
Small orifice

PTV® Solutions

ORDERING CODE:

Example: 1000LT-222-1-200

Ball Valve, SS316 CF8M Body, SS316 CF8M ball and stem, RPTFE Seat, NPT Thread, Size 2”

Available Body Material Code:

SS304 CF8 Stainless Steel: 1

SS316 CF8M Stainless Steel: 2

SS316L CF3M Stainless Steel: 3

Available Ball and Stem Material:

SS304 CF8 Stainless

Steel: 1 SS316 CF8M

Stainless Steel: 2 SS316L

CF3M Stainless Steel: 3

Available End Code:

Female NPT Thread: 1

Female BSP Thread: 2

Available Seat Material Code:

PTFE: 1

RPTFE: 2