Model **33ATD**

Combination Air and Vacuum Valve with Throttling Air Control Device

Description

DescriptionDesigned to protect pipelines from air lock and vacuum collapse, the CLA-VAL Model 33ATD Air Release and Vacuum Breaker Valve eliminates air and prevents vacuum formation in pipelines. A large venting orifice and large float clearances freely exhaust or admits air during pipeline filling or draining.

During normal pipeline operation, air accumulation and buoyancy cause the floats to lower or lift. As the water level lowers inside the valve, small amounts of accumulated air are released through the small orifice.

Once air is released, the patented float poppet system closes drip tight. Valve servicing is simple because the entire float poppet system, can be replaced without removal of the valve body from the pipeline.

Main Valve Features

- Automatically Eliminates Air Pockets
- Easily Serviced without removal from pipeline
- Simple, Effective Patented Design
- Corrosion Resistant Internal Parts

Listings and Approvals

UL LISTED

Typical Applications

- Vertical Turbine Pumps
- Split Case Pumps
- High Points of Piping Design

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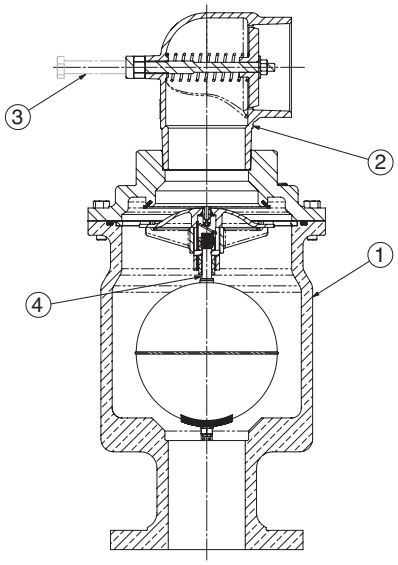

Part No.	Description
1	33A Body
2	TD Throttling Device
3	TD Adjustment Screw
4	Float Assembly

Cla-Val Model 33ATD combination air and vacuum valve operates until 2 Series 33ATD is often installed upstream of check valves in vertical pump discharges to throttle air out during start-up and to allow full air reentry when the pump stops.

Air Release Mode - Valve is normally open: When line is filled or pump started, air is throttled through the air control device TD. As liquid fills the valve, float ball rises to form a drip-tight closure and remaining air is exhausted through small orifice. Air throttling can be adjusted by means of adjusting the screw.

Vacuum Prevent Mode: When line pressure drops below positive pressure and the liquid level lowers, the float drops, unseating the valve and allowing air into the line, thus preventing a vacuum. The spring loaded disc in the TD throttling air control device is moved to the air intake position due to the negative pressure.

Main Valve Specifications

UL APPROVED SIZES

1", 2", 3", 4", 6"

Inlet: NPT or Flanged

Outlet: NPT

PRESSURE RATINGS

150 class, 250 psi maximum (Ductile Iron)
150 class, 285 psi maximum (All other materials)
300 class, 300 psi maximum (All materials)

TEMPERATURE RANGE

Water: to 180° F. Max

Materials

Main valve body & cover:

Standard Epoxy Coated Ductile Iron ASTM A-536*

Float:

316 Stainless Steel Standard
Monel
Super Duplex

Rubber Parts:

Buna-N® Synthetic Rubber

Optional UL Listed Materials for Seawater and Severe Service Applications:

- **Nickel Aluminum Bronze (NAB)** *ASTM B148 Alloy C95800*
- **Monel - QQ-N-288 Comp B** *ASTM A494 Grade M30H*
- **Cast Steel** *ASTM A216 Grade WCB*
- **316 Stainless Steel** *ASTM A743 Grades CF3M and CFM8*
- **Super Austenitic Stainless Steel** *ASTM A351 Grade CK3MCuN (SMO 254)*
- **Super Duplex Stainless Steel** *ASTM A890 Grade 5A (CE3MN)*

Pressure Ratings

Valve Size	Orifice Diameter	Standard Maximum Pressure
1"	.076"	300 psi
2"	.076”	300 psi
3" & 4"	.076”	300 psi
6"	.076”	300 psi
3" & 4"	Optional upon request .125"	300 psi

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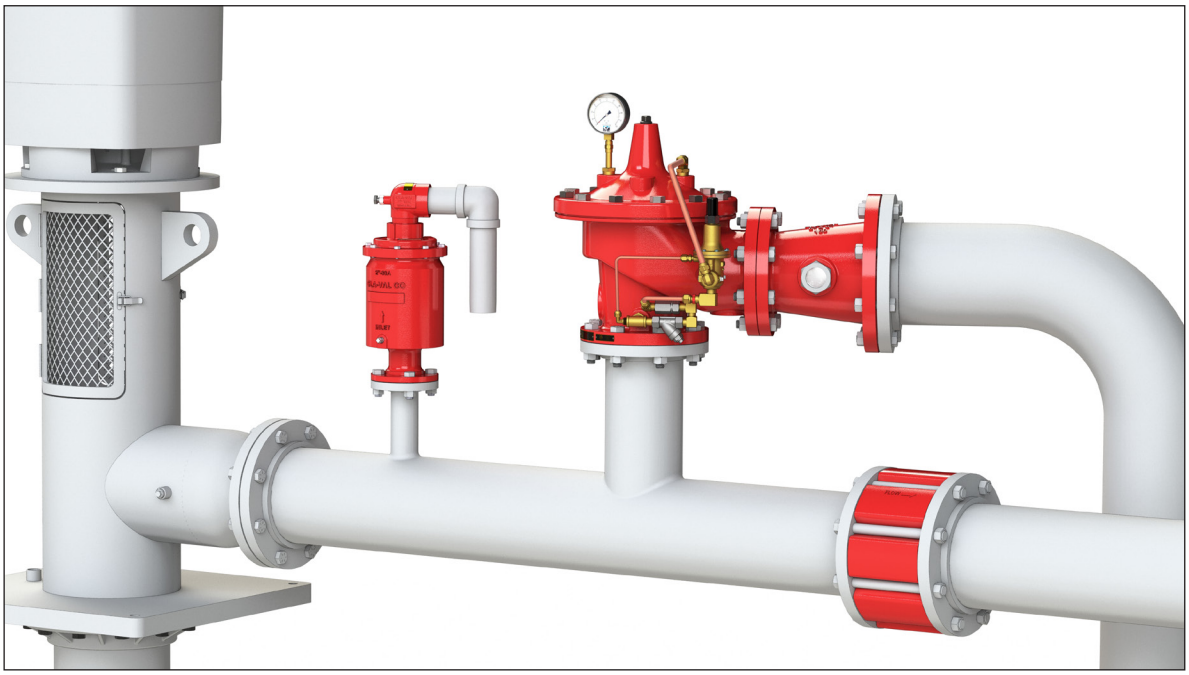
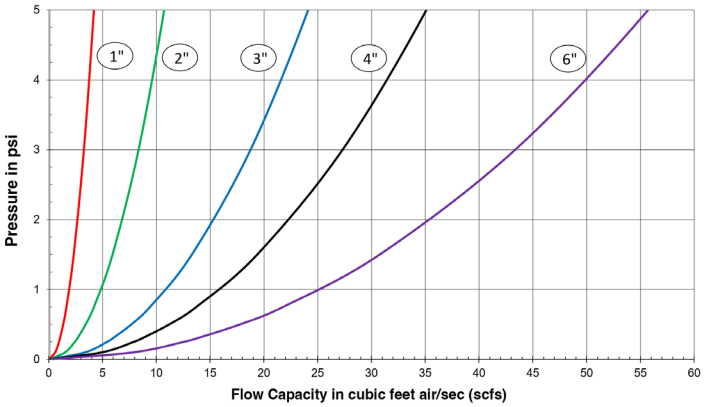


Valve Sizing Selection

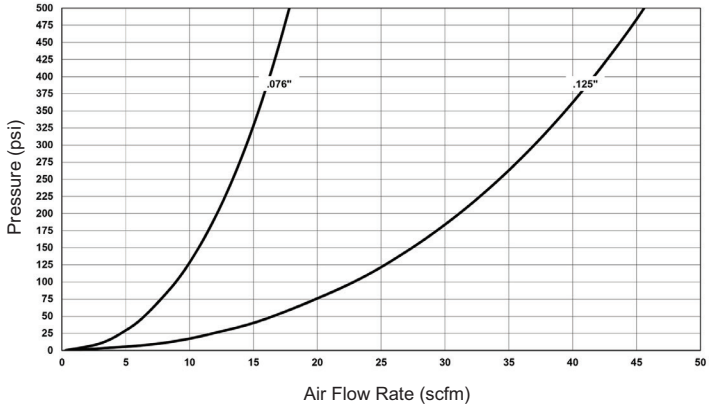
Air-Vacuum Flow Capacity

Determine anticipated water flow and allowable pressure differential for the pipeline application. Select valve from chart to exhaust or admit air at the same rate as water filling or draining (in CFS). For larger flows, two or more Model 33ATD's may be installed in parallel



Air Release Capacity

During pressurized pipeline operation, small pockets of entrapped air will be released through the float actuated 0.076 or .125 inch orifice. Use chart to determine discharge capacity.



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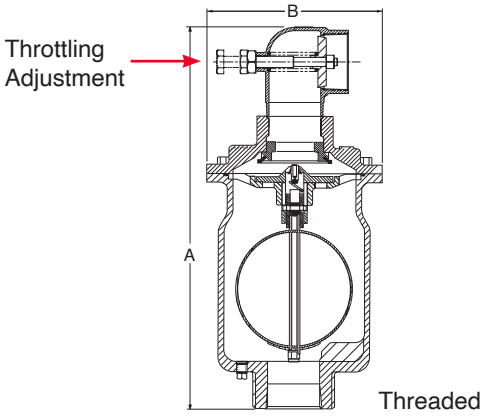
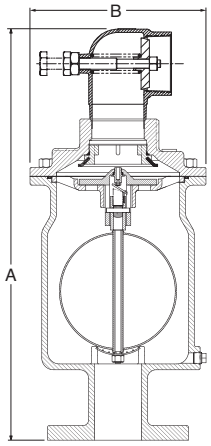
Dimensions (In Inches)

MODEL 33ATD - 1", 2", 3", 4" and 6" Sizes

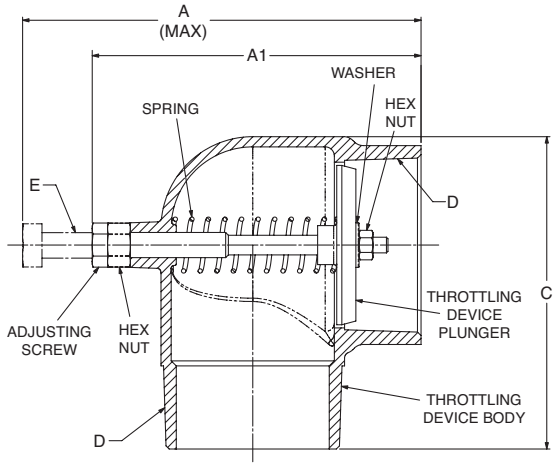
	33A Pressure Class 300 Lb Threaded				33A Pressure Class 150 Lb Flanged (INLET)					33A Pressure Class 300 Lb Flanged (INLET)				
Valve Size	1"*	2"	3"	4"	1"	2"	3"	4"	6"	1"	2"	3"	4"	6"
A	12.50	16.50	18.50	20.00	13.00	17.75	21.75	23.50	26.75	15.00	18.00	22.00	23.75	27.25
B	6.25	7.50	9.25	9.25	6.25	7.50	9.25	9.25	11.50	6.25	7.50	9.25	9.25	11.50
Inlet (ANSI)	1" NPT	2" NPT	3" NPT	4" NPT	1"	2"	3"	4"	6"	1"	2"	3"	4"	6"
Outlet (NPT)	1" NPT	2" NPT	3" NPT	4" NPT	1" NPT	2" NPT	3" NPT	4" NPT	6" NPT	1" NPT	4" NPT	3" NPT	4" NPT	6" NPT
Number of Holes	—	—	—	—	4	4	4	8	8	4	8	8	8	12
Diameter of Bolts	—	—	—	—	0.50	0.63	0.63	0.63	0.75	0.63	0.75	0.75	0.75	0.75
Approximate calculated shipping weight (lb.)	33	29	38	40	30	39	48	50	126	34	41	55	58	140



Threaded



Flanged



Throttling Device Dimensions (In Inches)

TD ASSEMBLY SIZE	A (MAX)	A1	ØB	C	D (NPT)	E
1"	4.25	3.00	1.61	3.00	1"-11-1/2	M10X1.00
2"	5.50	4.81	2.67	3.82	2"-11 1/2	M12X1.75
3"	9.00	6.45	4.06	6.20	3"-8	1/2-13 UNC
4"	9.05	7.33	5.20	7.72	4"-8	M12x1.75
6"	12.75	9.75	7.63	11.38	6"-8	5/8-11 UNC

Model Number Codes

Size
1"
2"
3"
4"
6"

Main Valve
33ATD

Body	
D	Ductile Iron
C	Cast Steel
T	316 SS
N	N.A.B.
U	Super Duplex
X	Other

Float	
T	316 SS (F)
M	Bronze/Monel
U	Super Duplex
X	Other

Elastomer	
B	Buna
E	EPDM
V	Viton

Inlet
NPT
ANSI 150#
ANSI 300#

Face	
	RF
	FF
X	Other

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