

► Simple, Reliable and Accurate



Illustration: Flanged Inlet
Threaded Inlet also available

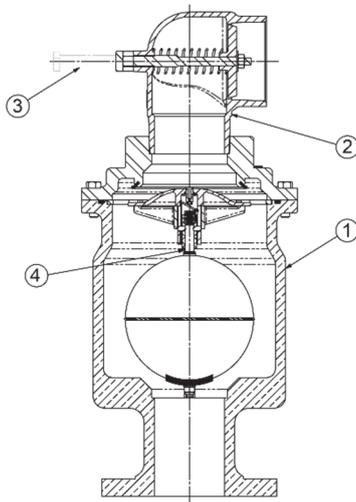
- **Automatically Eliminates Air Pockets**
- **Easily Serviced without Removal from Pipeline**
- **Simple, Effective Patented Design**
- **Corrosion Resistant Internal Parts**

Designed 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 formations 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.

► Description



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

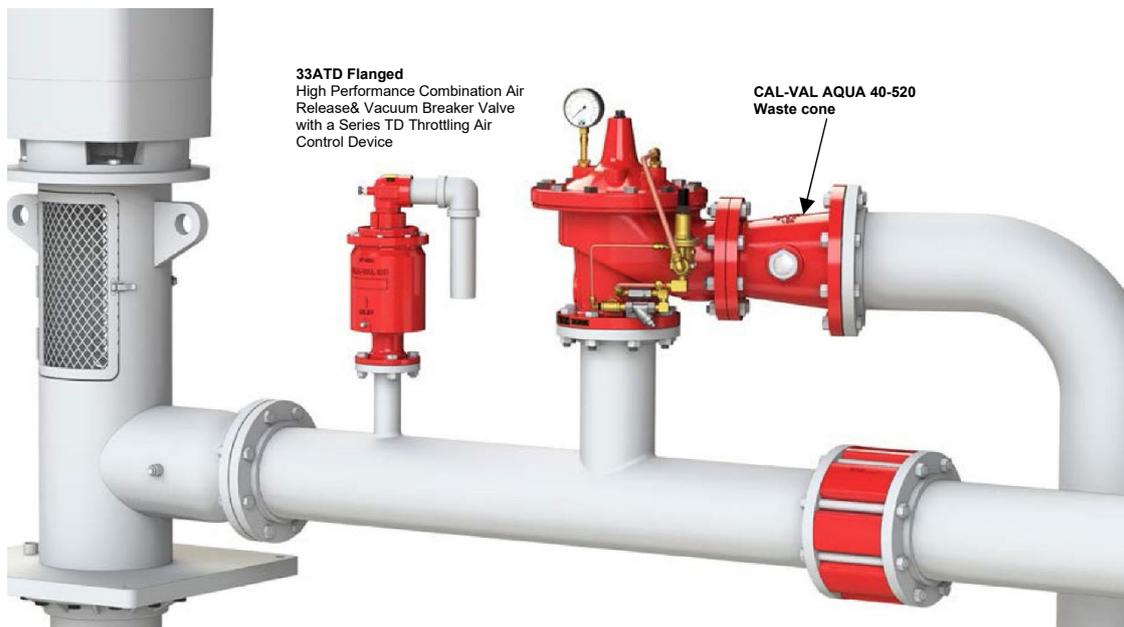
- **Nickel Aluminum Bronze (NAB)**
ASTM B148 Alloy C95800
- **Monel - QQ-N-288 Comp B**
ASTM A494 Grade M30H
- **Cast Steel**
ASTM A216 Grade WCB
- **316 Stainless Steel**
ASTM A743 Grades CF3M and CFM8
- **Super Austenitic Stainless Steel**
ASTM A351 Grade CK3MCuN (SMO 254)
- **Super Duplex Stainless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

► Pressure Ratings

Valve Size [inch]	Orifice Ø [mm]	Standard Max. Pressure
1"	1.9	300 psi
2"	1.9	300 psi
3" & 4"	1.9	300 psi
6"	1.9	300 psi
3" & 4"	Optional upon request. 3.2	300 psi

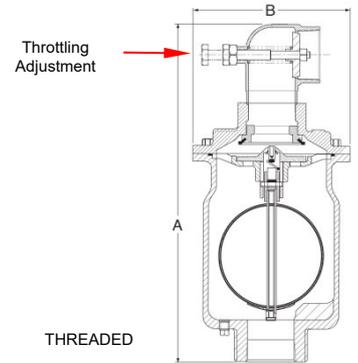
► Typical Applications

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

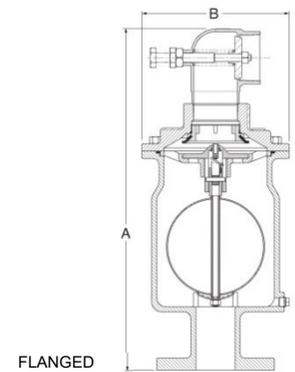


► Dimensions

33A Pressure Class 300 Lb Threaded				
Valve size [inches]	1"	2"	3"	4"
A [mm]	318	419	470	508
B [mm]	159	191	235	235
Inlet [ANSI]	1" NPT	2" NPT	3" NPT	4" NPT
Outlet [NPT]	1" NPT	2" NPT	3" NPT	4" NPT
Approximate calculated shipping weight [kg]	10	13	17	18



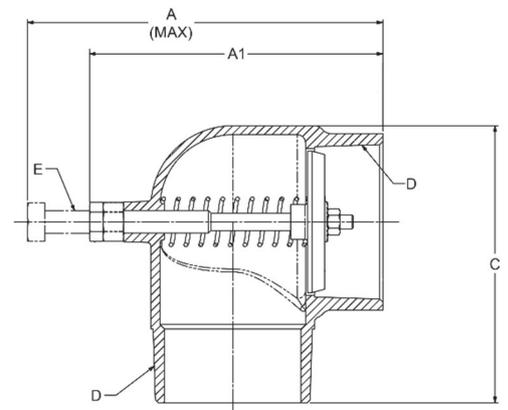
33A Pressure Class 150 Lb Flanged (INLET)					
Valve size [inches]	1"	2"	3"	4"	6"
A [mm]	330	451	552	597	680
B [mm]	159	191	235	235	292
Inlet [ANSI]	1"	2"	3"	4"	6"
Outlet [NPT]	1" NPT	2" NPT	3" NPT	4" NPT	6" NPT
Number of Holes	4	4	4	8	8
Diameter of Bolts [mm]	14	16	16	16	20
Approximate calculated shipping weight [kg]	15	18	22	23	57



33A Pressure Class 300 Lb Flanged (INLET)					
Valve size [inches]	1"	2"	3"	4"	6"
A [mm]	381	457	559	603	692
B [mm]	159	191	235	235	292
Inlet [ANSI]*	1"	2"	3"	4"	6"
Outlet [NPT]*	1" NPT	2" NPT	3" NPT	4" NPT	6" NPT
Number of Holes	4	8	8	8	12
Diameter of Bolts [mm]	16	16	20	20	20
Approximate calculated shipping weight [kg]	16	19	25	27	64

Throttling Device Dimensions

TD Assembly size	A (Max.) [mm]	A1 [mm]	C [mm]	D (NPT)	E
1"	108	76	76	1" - 11 1/2	M10x1.00
2"	140	122	97	2" - 11 1/2	M12x1.75
3"	229	164	157	3" - 8	1/2-13 UNC
4"	230	186	196	4" - 8	M12x1.75
6"	324	248	289	6" - 8	5/8-11 UNC





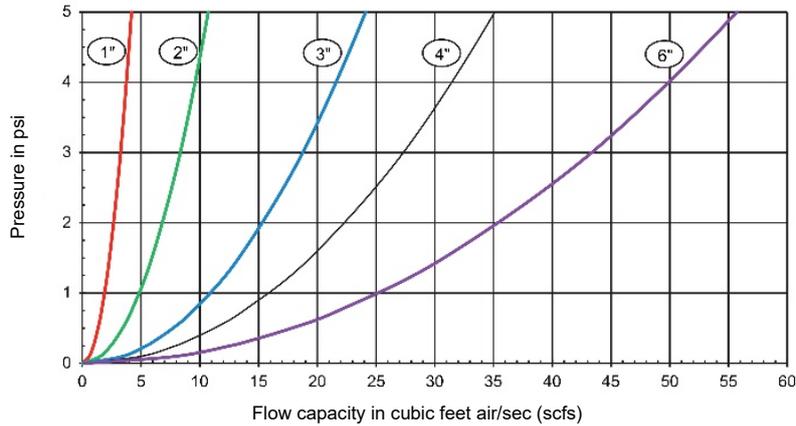
CLA-VAL 33ATD

Combination Air and Vacuum Valve with Throttling Air Control Device

▶ 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.

