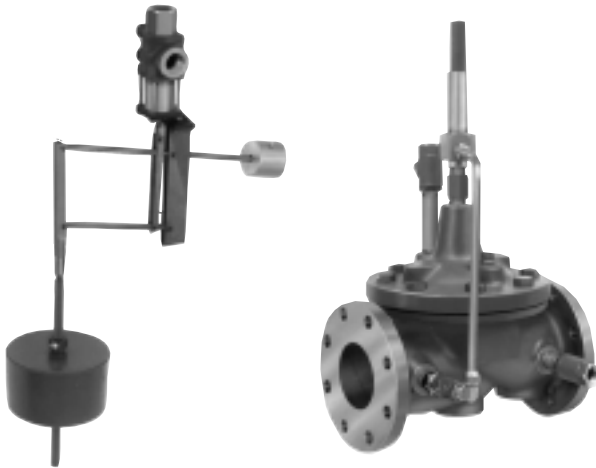




MODEL **427-01**
627-01 ✂

Modulating Float Valve



- **Accurate and Repeatable Level Control**
- **Reliable Hydraulic Operation**
- **Drip Tight Positive Shut-Off**
- **Multi Function Capability**
- **Completely Automatic Operation**

The Cla-Val Model 427-01/627-01 Float Valve modulates to maintain a constant liquid level in a storage tank by compensating for variations in supply or demand. It can be installed to control either the flow into or out of the tank by either Closing on a rising level or Opening on a rising level. This valve is a hydraulically-operated, pilot controlled diaphragm valve.

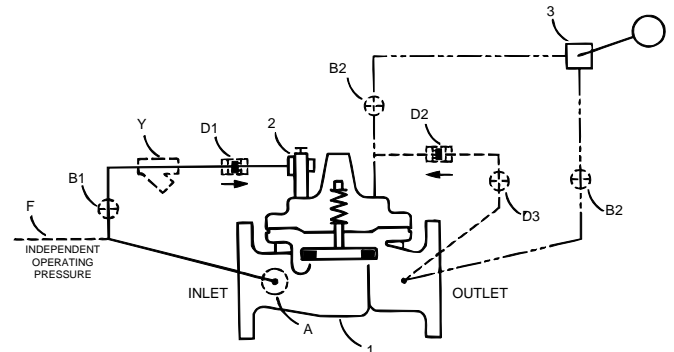
The Pilot Control System consists of a Variable Orifice Pilot Control mounted on the valve cover, and a Remote Mounted Float Control. A slight change in liquid level moves the float control. This action varies the pressure in the valve cover, causing the main valve to seek a new position. The Variable Orifice Pilot tracks the valve movement, automatically regulating the flow into the cover until the valve attains a position that is in direct relation to the position of the float control.

Schematic Diagram

Item	Description
1	Hytrol Main Valve
2	X74B-3 Stem Valve (Variable Orifice Pilot)
3	CFM-7 Float Control or CFM-7A

Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 Cock (Isolation Valve)
F	Independent Operating Pressure
Y	X43 "Y" Strainer



Installation Data

The valve may be installed in any position. The Remote Float Control may be mounted at any convenient location above the liquid level. Float rods are available in lengths from 2' to 12' in two-foot increments.

A stilling well (8" min. diameter) should be provided around the float if the liquid surface is subject to turbulence, ripples or wind.

The float control may be installed at any elevation above the valve providing that the amount of flowing line pressure in psi is equal to or greater than the vertical distance in feet between the valve and the float control.

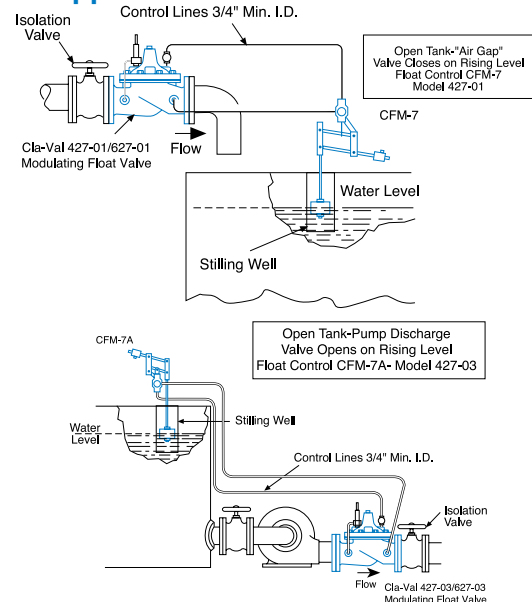
For good modulation under all conditions the float control discharge must be piped back into the main valve discharge side. Both lines connecting the valve and float control must be large enough to minimize pressure drop under maximum flow conditions ($\frac{3}{4}$ " I.D. to 20', 1" I.D. up to 30').

When a separate source of supply pressure is used by the pilot control system, that pressure must at all times be constant and equal to or greater than the pressure at the valve inlet.

DO NOT USE FOR ON-OFF SERVICE.

Note: We recommend protecting tubing and valve from freezing temperatures.

Typical Applications



Model 427-01 (Uses Basic Valve Model 100-01)**Pressure Ratings** (Recommended Maximum Pressure - psi)

Valve Body & Cover		Pressure Class			
		Flanged			Screwed End** Details
Grade	Material	ANSI Standards*	150 lb.	300 lb.	
ASTM A536	Ductile Iron	B16.42	250	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400
ASTM B62	Bronze	B16.24	225	400	400
ASTM A743	Stainless Steel	B16.5	285	400	400
356-T6	Aluminum	B16.1	275	—	—

Note: *ANSI standards are for flange dimensions only.
 Flanged valves are available faced but not drilled.
 ** End Details machined to ANSI B2.1 specifications.



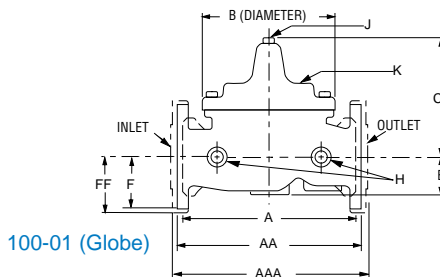
2" Globe, Screwed

Materials

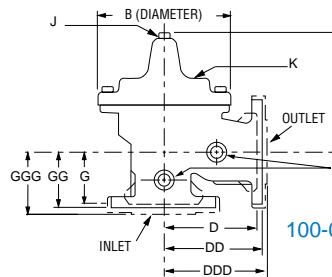
Component	Material Options						
Body & Cover	Ductile Iron	Cast Steel	Bronze	Stainless Steel	Aluminum		
Available Sizes	2" - 16"	2" - 16"	2" - 16"	2" - 16"	2" - 16"		
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze	Stainless Steel	Aluminum		
Trim: Disc Guide, Seat & Cover Bearing	Bronze is standard. Stainless Steel is optional.			Stainless Steel is standard.			
Disc	Buna-N® Rubber						
Diaphragm	Nylon Reinforced Buna-N® Rubber						
Stem, Nut & Spring	Stainless Steel						



4" Globe, Flanged



100-01 (Globe)



100-01 (Angle)



4" Angle, Flanged

Model 427-01 Dimensions (In inches)

VALVE SIZE (Inches)	2	2 ½	3	4	6	8	10	12	14	16
A Screwed	9.38	11.00	12.50	—	—	—	—	—	—	—
AA 150 ANSI	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00	39.00	41.38
AAA 300 ANSI	10.00	11.62	13.25	15.62	21.00	26.38	31.12	35.50	40.50	43.50
B DIA.	6.62	8.00	9.12	11.50	15.75	20.00	23.62	28.00	32.75	35.50
C MAX.	6.50	7.56	8.19	10.62	13.38	16.00	17.12	20.88	24.19	25.00
D Screwed	4.75	5.50	6.25	—	—	—	—	—	—	—
DD 150 ANSI	4.75	5.50	6.00	7.50	10.00	12.75	14.88	17.00	19.50	20.81
DDD 300 ANSI	5.00	5.88	6.38	7.88	10.50	13.25	15.56	17.75	20.25	21.62
E	1.50	1.69	2.06	3.19	4.31	5.31	9.25	10.75	12.62	15.50
F 150 ANSI	3.00	3.50	3.75	4.50	5.50	6.75	8.00	9.50	10.50	11.75
FF 300 ANSI	3.25	3.75	4.13	5.00	6.25	7.50	8.75	10.25	11.50	12.75
G Screwed	3.25	4.00	4.50	—	—	—	—	—	—	—
GG 150 ANSI	3.25	4.00	4.00	5.00	6.00	8.00	8.62	13.75	14.88	15.69
GGG 300 ANSI	3.50	4.31	4.38	5.31	6.50	8.50	9.31	14.50	15.62	16.50
H NPT Body Tapping	¾	½	½	¾	¾	1	1	1	1	1
J NPT Cover Center Plug	½	½	½	¾	¾	1	1	1 ¼	1 ½	2
K NPT Cover Tapping	¾	½	½	¾	¾	1	1	1	1	1
Valve Stem Internal Thread UNF	10-32	10-32	¼-28	¼-28	¾-24	¾-24	¾-24	¾-24	¾-24	½-20
Stem Travel	0.6	0.7	0.8	1.1	1.7	2.3	2.8	3.4	4.0	4.5
Approx. Ship Wt. Lbs.	35	50	70	140	285	500	780	1165	1600	2265

Model 627-01 (Uses Basic Valve Model 100-20)

Pressure Ratings (Recommended Maximum Pressure - psi)

Valve Body & Cover		Pressure Class		
		Flanged		
Grade	Material	ANSI Standards*	150 lb.	300 lb.
ASTM A536	Ductile Iron	B16.42	250	400
ASTM A216-WCB	Cast Steel	B16.5	285	400
ASTM B62	Bronze	B16.24	225	400
ASTM A743	Stainless Steel	B16.5	285	400
356-T6	Aluminum	B16.1	275	—

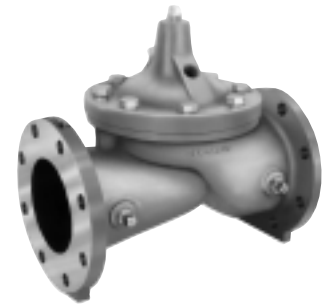
Note: *ANSI standards are for flange dimensions only.
Flanged valves are available faced but not drilled.



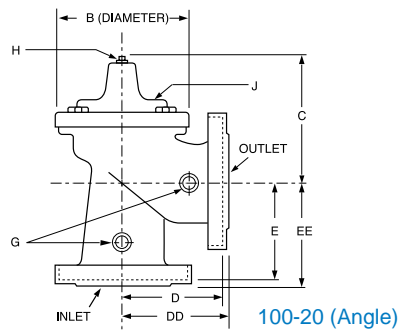
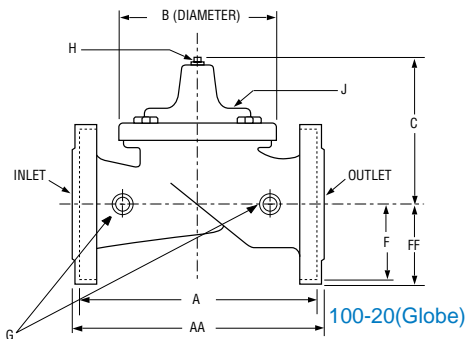
3" Globe, Flanged

Materials

Component	Material Options						
Body & Cover	Ductile Iron	Cast Steel	Bronze	Stainless Steel	Aluminum		
Available Sizes	3"-30"	3"-30"	3"-16"	3"-16"	3"-16"		
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze	Stainless Steel	Aluminum		
Trim: Disc Guide, Seat & Cover Bearing	Bronze is standard. Stainless Steel is optional.			Stainless Steel is standard.			
Disc	Buna-N® Rubber						
Diaphragm	Nylon Reinforced Buna-N® Rubber						
Stem, Nut & Spring	Stainless Steel						



6" Globe, Flanged





































6" Angle, Flanged

Model 627-01 Dimensions (In inches)

VALVE SIZE (Inches)	3	4	6	8	10	12	14	16	18	20	24	30
A 150 ANSI	10.25	13.88	17.75	21.38	26.00	30.00	34.25	35.00	42.12	48.00	48.00	63.25
AA 300 ANSI	11.00	14.50	18.62	22.38	27.38	31.50	—	36.62	43.63	49.62	49.75	—
B DIA.	6.62	9.12	11.50	15.75	20.00	23.62	28.00	28.00	35.44	35.44	35.44	53.19
C MAX.	7.00	8.62	11.62	15.00	17.88	21.00	20.88	25.75	25.00	31.00	31.00	43.94
D 150 ANSI	—	6.94	8.88	10.69	—	—	—	—	—	—	—	—
DD 300 ANSI	—	7.25	9.38	11.19	—	—	—	—	—	—	—	—
E 150 ANSI	—	5.50	6.75	7.25	—	—	—	—	—	—	—	—
EE 300 ANSI	—	5.81	7.25	7.75	—	—	—	—	—	—	—	—
F 150 ANSI	3.75	4.50	5.50	6.75	8.00	9.50	11.00	11.75	15.88	14.56	17.00	19.88
FF 300 ANSI	4.12	5.00	6.25	7.50	8.75	10.25	—	12.75	15.88	16.06	19.00	—
G NPT Body Tapping	3/8	1/2	3/4	3/4	1	1	1	1	1	1	1	1
H NPT Cover Center Plug	1/2	1/2	3/4	3/4	1	1	1 1/4	1 1/4	2	2	2	2
J NPT Cover Tapping	3/8	1/2	3/4	3/4	1	1	1	1	1	1	1	1
Valve Stem Internal												
Thread UNF	10-32	1/4-28	1/4-28	3/8-24	3/8-24	3/8-24	3/8-24	3/8-24	1/2-20	1/2-20	1/2-20	3/4-16
Stem Travel	0.6	0.8	1.1	1.7	2.3	2.8	3.4	3.4	4.5	4.5	4.5	6.5
Approx Ship Wt. Lbs.	45	85	195	330	625	900	1250	1380	2733	2551	2733	6500

Valve Selection

Valve Selection		These Symbols  and  Indicate Available Sizes																
		Inches			2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	30
		mm			50	65	80	100	150	200	250	300	350	400	450	500	600	750
		End Detail	Screwed	Screwed & Flanged					Flanged									
Model 427-01	Basic Valve 100-01	Globe																
		Angle																
	Suggested Flow (GPM)	Max. Continuous			210	300	460	800	1800	3100	4900	7000	8400	11000				
		Max. Intermittent			260	370	580	990	2250	3900	6150	8720	10540	13700				
	Suggested Flow (Liters/sec)	Max. Continuous			13	19	29	50	113	195	309	441	529	693				
		Max. Intermittent			16.4	23	37	62	142	246	387	549	664	863				
Model 627-01	Basic Valve 100-20	Globe																
		Angle																
	Suggested Flow (GPM)	Max. Continuous				260	580	1025	2300	4100	6400	9230	9230	16500	16500	16500	28000	
	Suggested Flow (Liters/sec)	Max. Continuous				16	37	65	145	258	403	581	581	1040	1040	1040	1764	

* 627-01 is the reduced internal port size version of the 427-01.

For 100-01 basic valves suggested flow calculations were based on flow through Schedule 40 Pipe. Maximum continuous flow is approx. 20 ft/sec (6.1 meters/sec) & maximum intermittent is approx. 25 ft/sec (7.6 meters/sec). For 100-20 basic valves suggested flow calculations were based on flow through the valve seat. Approx. 26 ft/sec (7.9 meters/sec) is used for maximum continuous flow. Maximum continuous flow through the valve seat for the valve seat for the 30" 100-20 is approx. 20 ft/sec (6.1 meters/sec).

**Flanged End Detail Only

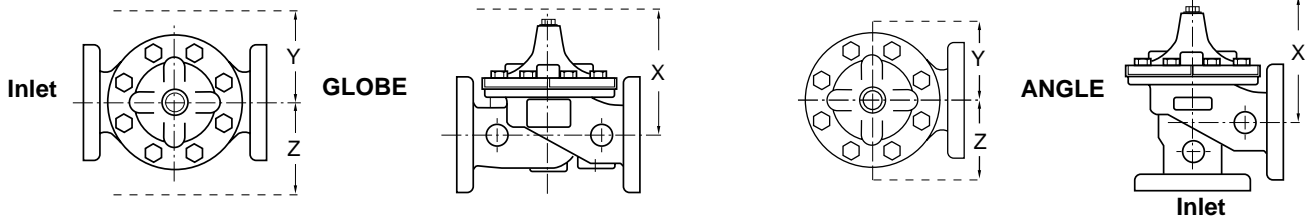
Important Notice: Do Not Oversize

Minimum Differential: 5 psi minimum
differential between valve inlet and outlet

Pilot System Dimensions (In Inches)

We recommend providing adequate space around valve for maintenance work

VALVE SIZE		2"	2½"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"
X	Max.	18.50	19.75	20.00	21.00	21.00	21.25	21.75	27.00	31.00	33.50	33.50	33.50	50.00	50.00
Y	Max.	4.00	4.50	5.00	6.00	8.00	10.25	12.00	14.25	16.75	18.00	18.00	18.00	30.00	30.00
Z	Max.	7.00	7.50	8.25	9.25	11.50	13.50	15.50	17.50	20.00	21.25	21.25	18.00	30.00	30.00



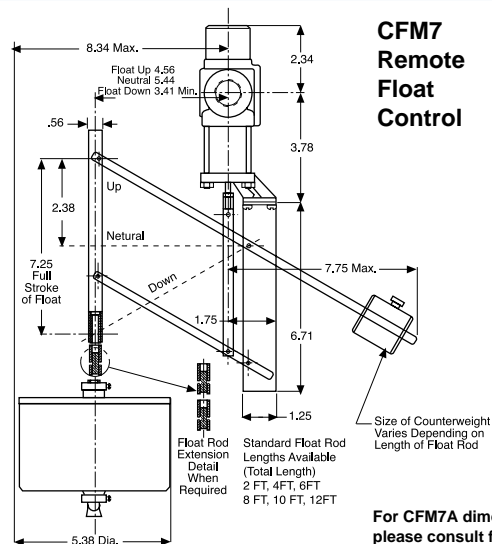
Pilot System Specifications

Temperature Range

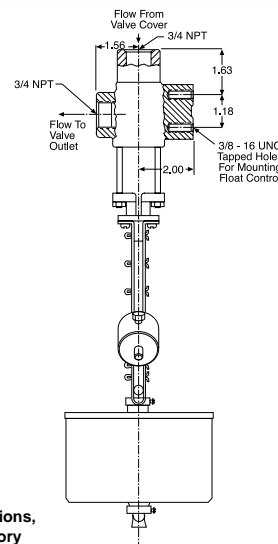
Water: to 180°F

Materials

Pilot Control: Brass
Trim: Stainless Steel
Type 303
Rubber: Buna-N® Synthetic Rubber
Float: Polypropylene, 5 3/8" dia. If temp exceeds 160°F specify a stainless steel float.
Float Rod: Valves 6" & smaller, two 12" sections of PVC rod.
Valves 8" & larger, Four sections as above.



For CFM7A dimensions, please consult factory



When Ordering, Please Specify

- Catalog No. 427- 01 or No. 627-01
- Valve Size
- Pattern - Globe or Angle
- Pressure Class
- Materials Desired
- Screwed or Flanged
- Valve Closing or Valve Opening on Rising Water Level
- Desired Options
- When Vertically Installed



E-427-01/627-01 (R-11/01)

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