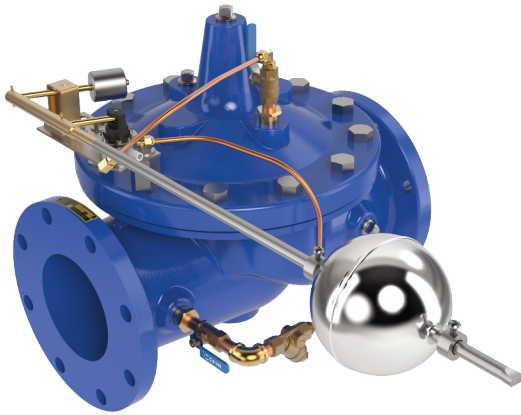




# MODEL— 624-14

## Float Valve with Pressure Sustaining Control

- Accurate and Repeatable Level Control
- Fully Adjustable High and Low Level Settings
- Simple Design, Proven Reliable
- Easy Installation and Maintenance



The Cla-Val Model 624-14 Float Valve accurately controls the liquid level in tanks as well sustains pressure using a CRL or CRL-60 Pressure Relief Pilot Control to a pre-determined set point. The valve is designed to open when level reaches a low level, while still maintaining the pre-set upstream pressure. When the liquid level reaches a pre-set high point, the valve will close drip-tight.

This is a hydraulically operated, diaphragm valve with the pilot control and float mechanism mounted on the cover of the main valve. The float positions the pilot control to close the valve when the float contacts the upper stop. The high and low liquid levels are adjusted by positioning the stop collars on the float rod. The difference between high and low levels can be adjusted to as little as 1" (25 mm), or to as much as 18" (450 mm).

Level settings can be as much as 11.5 feet (17,526 mm) below the valve. The float mechanism may be located remotely from the main valve.

### Schematic Diagram

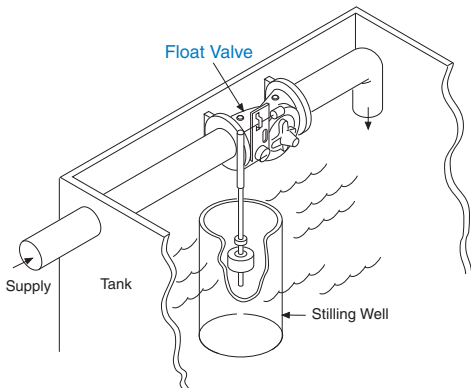
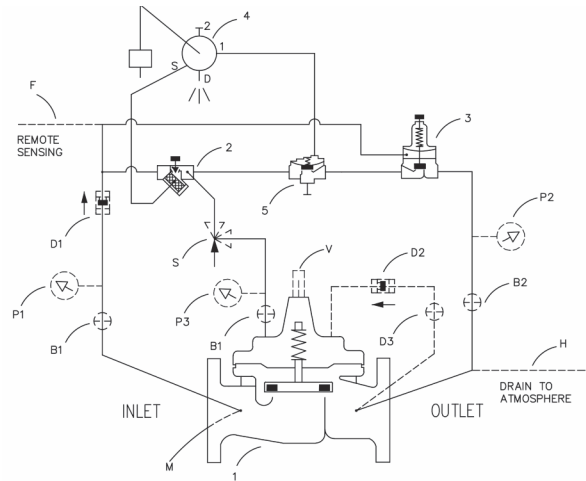
#### Item Description

- 1 100-20 Hytrol Main Valve
- 2 X42N-3 Strainer Needle Valve
- 3 CRL/CRL-60 Pressure Relief Control
- 4 CF1-C1 Float Control
- 5 100-01 Hytrol (Reverse Flow)

### Optional Features

#### Item Description

- B CK2 Isolation Valve
- D Check Valves with Cock
- F Remote Pilot Sensing
- H Drain to Atmosphere
- M X144 e-FlowMeter
- P X141 Pressure Gauge
- S CV Flow Control (Opening)
- V X101 Valve Position Indicator



### Typical Application

The Model 624-14 Float Valve is commonly mounted above the high water level in a tank. Globe pattern valves are supplied standard with the float control mounted on the cover as illustrated, with a horizontal discharge. Angle pattern valves are configured to discharge downward.

#### Notes:

1. We recommend protecting tubing and valve from freezing temperatures.
2. Must be inspected periodically.

### Installation

A stilling well (8" minimum diameter) must be provided around the float. When the valve is mounted on top of the tank roof, a 2" clearance hole should be provided for side movement of the float rod where the rod goes through the top of the tank.

A clear independent source of air or water may be used to operate the valve (option F). The pressure from this independent source must at all times be equal to or greater than pressure at the valve inlet. If minimum flowing line pressure is less than 10 psi, consult factory.

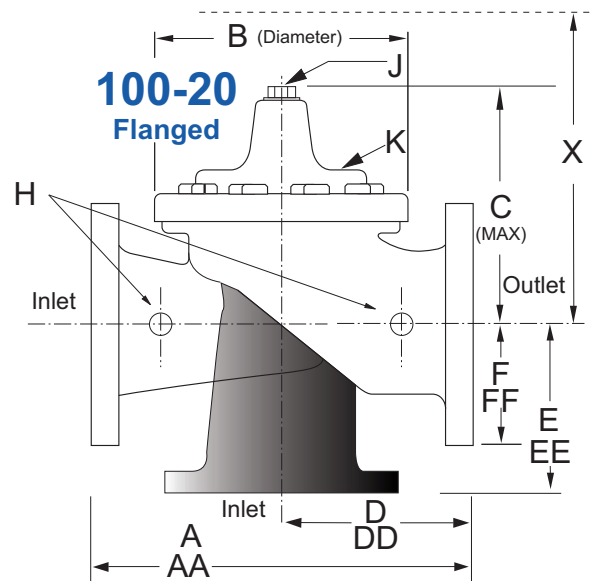
If the float control is remotely mounted from the main valve, the control may be installed at any elevation above the valve, provided the flowing line pressure in psi is greater than the vertical distance in feet between the valve and the float control. See the technical data sheet on Model CF1-C1 for additional information.

## Model 624-14 (Uses 100-20 Reduced Port Hytrol Main Valve)

### Pressure Ratings (Recommended Maximum Pressure - psi)

Valve Body & Cover		Pressure Class		
		Flanged		
Grade	Material	ANSI Standards*	150 Class	300 Class
ASTM A536	Ductile Iron	B16.42	250	400
ASTM A216-WCB	Cast Steel	B16.5	285	400
UNS 87850	Bronze	B16.24	225	400

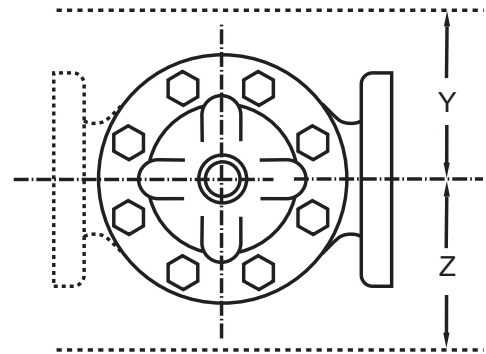
Note: \* ANSI standards are for flange dimensions only.  
Flanged valves are available faced but not drilled.  
**Valves for higher pressure are available; consult factory for details**



### Materials

Component	Standard Material Combinations		
Body & Cover	Ductile Iron	Cast Steel	Bronze
Available Sizes (inches)	3" - 8"	3" - 8"	3" - 8"
Available Sizes (mm)	80 - 300 mm	80 - 300 mm	80 - 300 mm
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze
Trim: Disc Guide, Seat & Cover Bearing	Bronze is Standard Stainless Steel is Optional		
Disc	Buna-N® Rubber		
Diaphragm	Nylon Reinforced Buna-N® Rubber		
Stem, Nut & Spring	Stainless Steel		

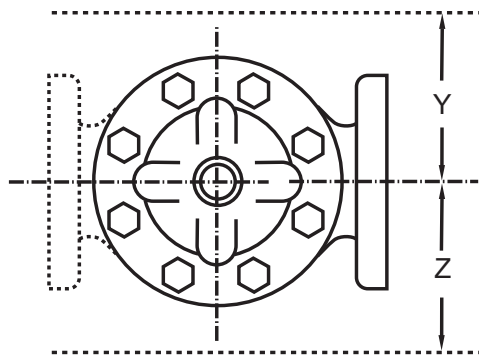
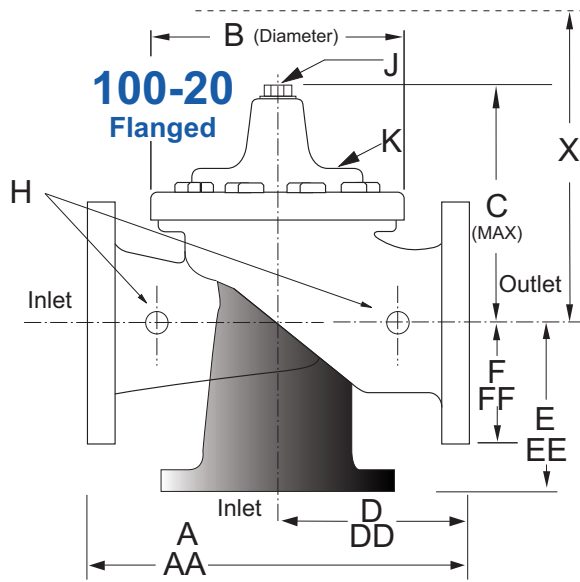
For material options not listed, consult factory.  
Cla-Val manufactures valves in more than 50 different alloys.



### Model 624-14 Dimensions (Inches)

Valve Size (Inches)	3	4	6	8
A 150 ANSI	10.25	13.88	17.75	21.38
AA 300 ANSI	11.00	14.50	18.62	22.38
B Diameter	6.62	9.12	11.50	15.75
C Maximum	7.00	8.62	11.62	15.00
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
FF 300 ANSI	4.12	5.00	6.25	7.50
H NPT Body Tapping	0.375	0.50	0.75	0.75
J NPT Cover Center Plug	0.50	0.50	0.75	0.75
K NPT Cover Tapping	0.375	0.50	0.75	0.75
Stem Travel	0.60	0.80	1.10	1.70
Approx. Ship Weight (lbs)	45	85	195	330

**Model 624-14 Metric Dimensions** (Uses 100-20 Reduced Port Hytrol Main Valve)



**Float Control Overview**

The Cla-Val Model CF1-C1 Float Control is a float-actuated, multi-port pilot control which provides non-modulating, two-position, on-off operation. It is used primarily to operate remotely located Cla-Val valves requiring three-way or four-way pilot valve operation. Designed for used in open tanks, this control operates on a minimum level change of approximately one inch.

**CF1-C1 Stainless Steel Float**



**Model 624-14 Dimensions** (mm)

Valve Size (mm)	80	100	150	200	250	300
A 150 ANSI	260	353	451	543	660	762
AA 300 ANSI	279	368	473	568	695	800
B Diameter	168	232	292	400	508	600
C Maximum	178	219	295	381	454	533
D 150 ANSI	—	176	226	272	324	380
DD 300 ANSI	—	184	238	284	—	—
E 150 ANSI	—	140	171	184	205	349
EE 300 ANSI	—	148	184	197	—	—
F 150 ANSI	95	114	140	171	203	241
FF 300 ANSI	105	127	159	191	222	260
H NPT Body Tapping	0.375	0.50	0.75	0.75	1.00	1.00
J NPT Cover Center Plug	0.50	0.50	0.75	0.75	1.00	1.00
K NPT Cover Tapping	0.375	0.50	0.75	0.75	1.00	1.00
Stem Travel	15	20	28	43	58	71
Approx. Ship Weight (kgs)	20	39	89	150	284	409

624-14 Valve Selection	100-20 Pattern: Globe (G), Angle (A), End Connections: Flanged (F) Indicate Available Sizes															
	Inches	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
	mm	80	100	150	200	250	300	350	400	450	500	600	750	900	1000	1200
Main Valve 100-20	Pattern	G	G, A	G, A	G, A	Consult Factory for larger sizes.										
	End Detail	F	F	F	F											
Suggested Flow (gpm)	Maximum	260	580	1025	2300											
Suggested Flow (Liters/Sec)	Maximum	16	37	65	145											

100-20 Series is the reduced internal port size version of the 100-01 Series.

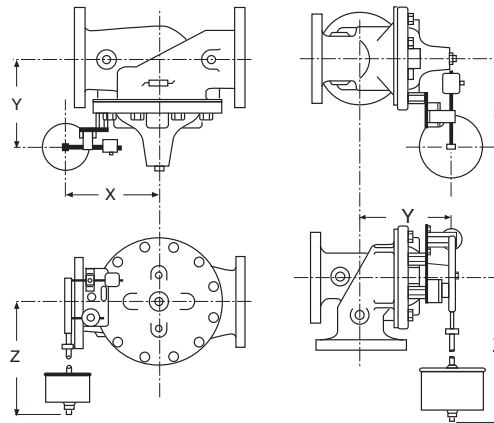
## Pilot System Dimensions

### 624-14 Float Valve (Globe)

Size	3" (80 mm)	4" (100 mm)	6" (150 mm)	8" (200 mm)
X	6.25" (160 mm)	7.25" (180 mm)	8.00" (200 mm)	10.25" (260 mm)
Y	7.06" (180 mm)	7.50" (190 mm)	8.75" (220 mm)	9.75" (230 mm)
Z (MAX)*	28.50" (724 mm)	29.00" (737 mm)	29.25" (743 mm)	29.25" (743 mm)

### 624-14 Float Valve (Angle)

Size	4" (100 mm)	6" (150 mm)	8" (200 mm)
X	7.25" (180 mm)	8.25" (210 mm)	10.50" (260 mm)
Y	7.50" (190 mm)	8.75" (220 mm)	9.75" (230 mm)
Z (MAX)*	29.00" (737 mm)	29.25" (743 mm)	29.25" (743 mm)



**Globe Pattern**  
3" - 8" (80 - 200 mm)

**Angle Pattern**  
4" - 8" (100 - 200 mm)

#### Notes:

- 1) \*Z (Max.) is with standard float rod.
- 2) We recommend providing adequate space around valve for maintenance work
- 3) Dimensions cover Threaded, Flanged and Grooved connections.

## Pilot System Specifications

### Pressure Rating

300 psi Maximum.

### Temperature Rating

Water: to 180°F (82°C) Maximum

### Materials

In contact with operating fluid:

Nylon-reinforced Delrin, Stainless Steel,

Monel, with Buna-N® seals

Float linkage and float rod: Brass and PVC

Base plate: 316 Stainless Steel

Float: 304 Stainless Steel

### Float

5<sup>3</sup>/<sub>8</sub>" (180 mm) diameter.

### Float Rod

Standard: Two 12" (300mm) sections PVC rod,  
6" (150 mm) & smaller

12" (300mm) extension increments at additional cost.  
Larger counterweight required if float rod length  
exceeds 5' (1524 mm).

**Optional:** 24" (600 mm) stainless steel rod, with  
24" (600 mm) extension increments at additional cost.  
Larger counterweight required if float rod length  
exceeds 2' (600 mm).

If maximum temperature exceeds 160°F (71°C) specify  
stainless steel float rod.

### Adjustment Range

Level Differential:

1" min. to 18" max. (25 - 450 mm) with PVC rod.

1" min to 40" max. (25 - 1016 mm) with stainless steel rod.

### Operating Fluids

Clean liquids or gases compatible with specified materials.

### When Ordering, Please Specify

1. Catalog No. 624-14
2. Valve Size
3. Pattern - Globe or Angle
4. Pressure Class
5. Threaded or Flanged
6. Float Rod Material and Length
7. Float Ball Material
8. Desired Options
9. When Vertically Installed