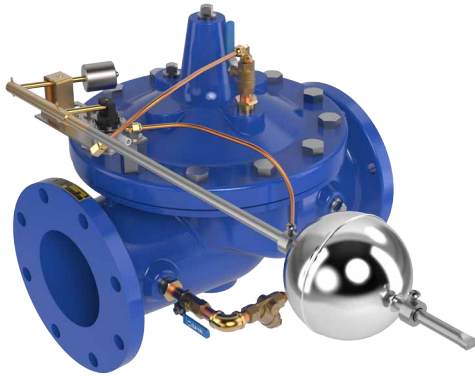




— MODEL — **624-01**  
 (Sizes 3" - 8" / 20 - 300 mm)  
**Float Valve**



- **Accurate and Repeatable Level Control**
- **On-Off or Non-Modulating Action**
- **Fully Adjustable High and Low Level Settings**
- **Simple Design, Proven Reliable**
- **Easy Installation and Maintenance**

The Cla-Val Model 624-01 Float Valve is a non-modulating valve that accurately controls the liquid level in tanks. This valve is designed to open fully when the liquid level reaches a pre-set low point and close drip-tight when the level reaches a preset high point.

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).

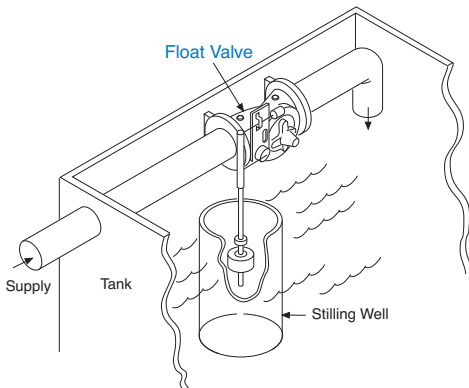
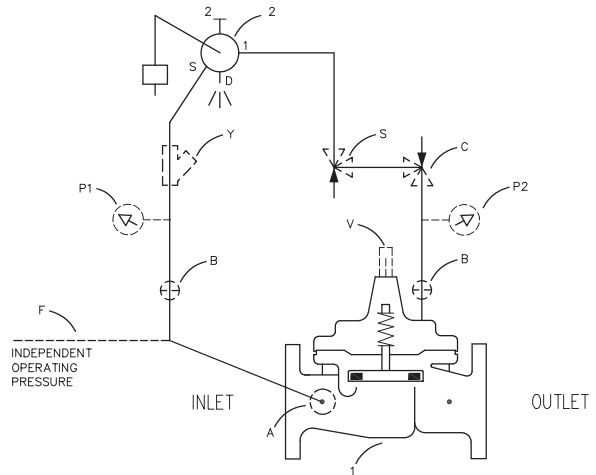
Level settings can be as much as eleven and one half feet below the valve. The float mechanism may be located remotely from the main valve. See the technical data sheet on Model CF1-C1 Float Control for additional information.

**Schematic Diagram**

| Item | Description                             |
|------|---|
| 1    | 100-20 Hytrol Main Valve (reduced port) |
| 2    | CF1-C1 Float Control                    |

**Optional Features**

| Item | Description                    |
|------|--------------------------------|
| A    | X46A Flow Clean Strainer       |
| B    | CK2 Isolation Valve            |
| C    | CV Flow Control (Closing)      |
| F    | Independent Operating Pressure |
| P    | X141 Pressure Gauge            |
| S    | CV Speed Control (Opening)     |
| V    | X101 Valve Position Indicator  |
| Y    | X43 "Y" Strainer               |



**Typical Application**

The Model 624-01 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.

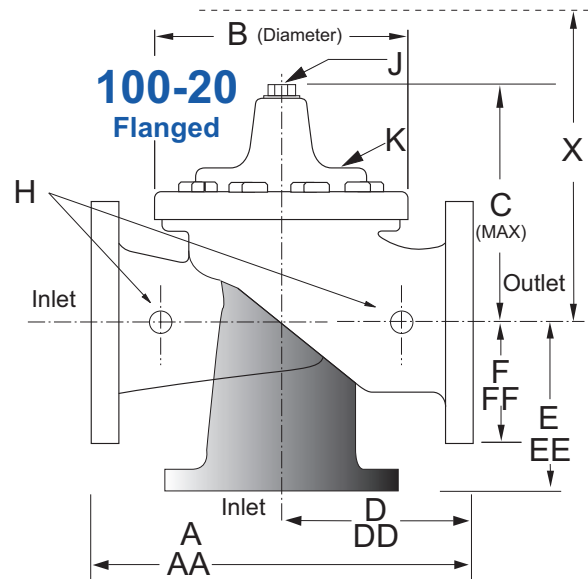
If the float control is remotely mounted from the main valve, the control may be installed at any elevation above the valve, provided the flowing line pressure in psi is greater than the vertical distance in feet between the valve and the float control. See the technical data sheet on Model CF1-C1 for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

## Model 624-01 (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       |

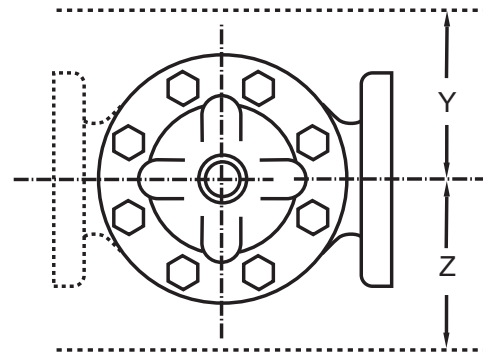
Note: \* ANSI standards are for flange dimensions only.  
Flanged valves are available faced but not drilled.  
**Valves for higher pressure are available; consult factory for details**



### 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<br>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 624-01 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   |

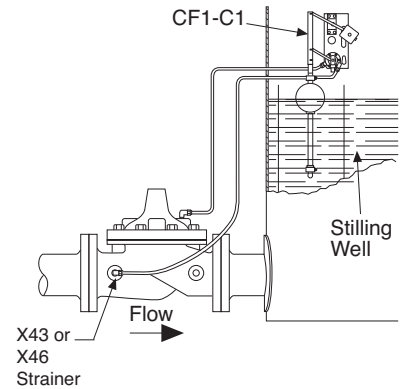
## Installation Data

The float control is mounted above the high water level in the tank. The valve is installed in the line leading to the tank and is connected to the float control pilot by tubing. (Min. 3/8" tubing)

When line pressure is used to operate the valve, tubing connections are made from the float control pilot to the valve cover, and also to the inlet side of the valve. An X46 Flow Clean Strainer must be installed in the inlet side of the valve. The control may be installed at any elevation above the valve, providing that the flowing line pressure in psi is equal to, or greater than, the vertical

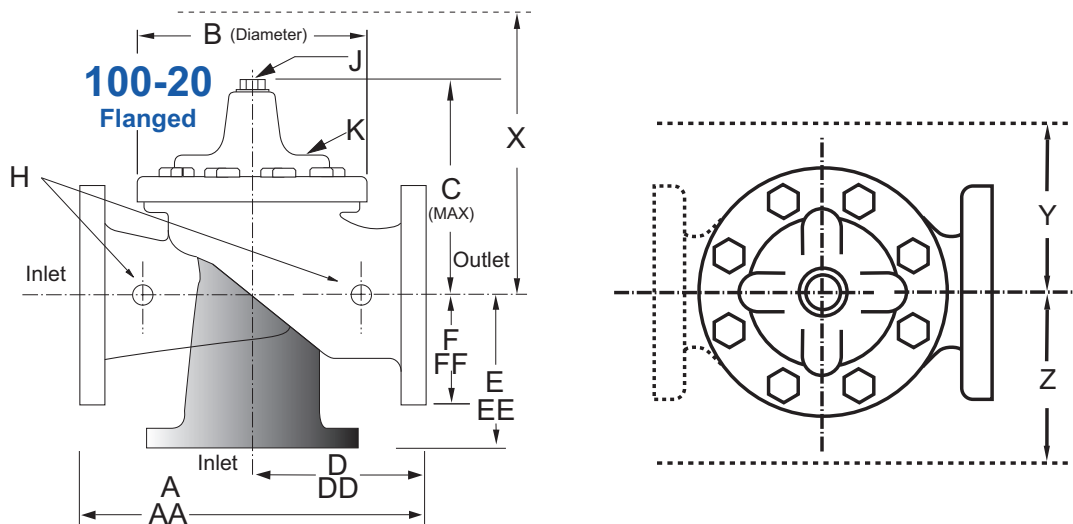
distance in feet between the valve and the float control.

A clean independent source of air or water may be used to operate the valve. The pressure from this independent source must constantly be equal to or greater than pressure at the valve inlet. The independent source is connected to the float control pilot in place of the supply line connected to the inlet side of the valve. If the Model 100-01 under the control of the CF1-C1 is 8" or larger, auxiliary Hytrol valves may be required. Consult factory for details.



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

## Model 624-01 Metric Dimensions (Uses 100-20 Reduced Port Hytrol Main Valve)



## Model 624-01 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  |

| 624-01<br>Valve<br>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<br>100-20              | Pattern   | G   | G, A | G, A | G, A | See the 124-02/624-02 Technical Data Sheet for larger sizes. |     |     |     |     |     |     |     |     |      |      |
|                                   | End Detail  | F   | F    | F    | F    |  |     |     |     |     |     |     |     |     |      |      |
| Suggested<br>Flow<br>(gpm)        | Maximum   | 260 | 580  | 1025 | 2300 |  |     |     |     |     |     |     |     |     |      |      |
| Suggested<br>Flow<br>(Liters/Sec) | Maximum   | 16  | 37   | 65   | 145  |  |     |     |     |     |     |     |     |     |      |      |

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

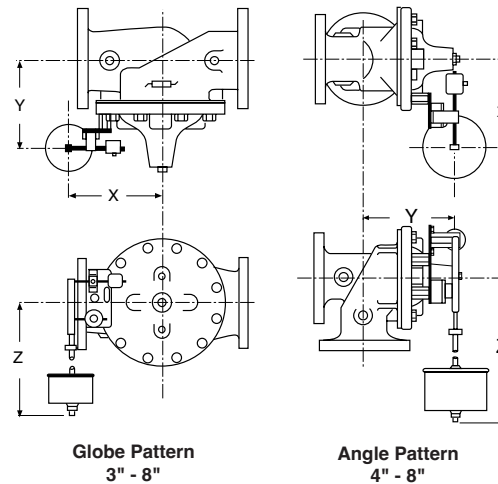
## Pilot System Dimensions

### 624-01 Float Valve (Globe)

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

### 624-01 Float Valve (Angle)

| Size     | 4"<br>(100 mm)     | 6"<br>(150 mm)     | 8"<br>(200 mm)     |
|----------|--------------------|--------------------|--------------------|
| X        | 7.25"<br>(180 mm)  | 8.25"<br>(210 mm)  | 10.50"<br>(260 mm) |
| Y        | 7.50"<br>(190 mm)  | 8.75"<br>(220 mm)  | 9.75"<br>(230 mm)  |
| Z (MAX)* | 29.00"<br>(737 mm) | 29.25"<br>(743 mm) | 29.25"<br>(743 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. 624-01
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