

# Diaphragm Valve Type 317



## General

- **Size:** 2½"–6"
- **Material:** PVC, CPVC, PROGEF® Standard PP, SYGEF® Standard PVDF, SYGEF® Plus PVDF-HP
- **Diaphragm:** EPDM, FPM, NBR, CSM, PTFE/EPDM, PTFE/FPM, PTFE-HP/EPDM or PTFE-HP/FPM
- **End Connection:** ANSI 150/DIN flanged
- **Top Works:** Body bolts
- **Mounting:** Stainless steel inserts
- **Position Indicator:** Integrated graduated

## Key Certifications

- **FDA CFR 21 177.1520:** PP and PVDF
- **FDA CFR 21 177.2600:** EPDM and FPM
- **FDA CFR 21 177.1550:** PTFE
- **USP 25 Class VI (physiological non-toxic):** PP and PVDF
- **ABS:** All materials

## Sample Specification

The Type 317 diaphragm valve family shall be an ANSI B16.5 150 lb flanged connection. All Type 317 diaphragm valves shall be bidirectional. All fasteners securing bonnet to body connection shall be stainless steel. All valves shall have threaded stainless steel inserts for mounting. The stroke shall be indicated by a graduated indicator. All valves shall be tested in accordance to ISO9393 and designed to ISO16138 standards. All valves shall be manufactured under ISO9001 for Quality and ISO14001 for Environmental Management. Following assembly, every valve shall be tested and certified bubble tight exceeding Class VI standards.

## Optional Features

- **Limit Switches:** Inductive
- **Actuation:** Pneumatic
- **Material:** ABS
- **End Connection:** ISO/DIN flanged, fusion socket union, fusion spigot union
- **Hardware:** Alternatives available upon request
- **Cleaned:** Silicone/oil free

## Material Specification

PVC valves shall meet ASTM D1784 cell classification 12454 standards. CPVC valves shall meet ASTM D1784 cell classification 23447-B standards. PP valves shall meet ASTM D5847-14 cell classification PP0510B66851 standards. PVDF valves shall be type 1, grade 2 according to ASTM D3222 standards. Valves of all materials shall be RoHS compliant.

## Material Availability

| Material | Range (inch) | Range (mm) |
|----------|--------------|------------|
| PVC      | 2-6          | 75-160     |
| CPVC     | 2-4          | 75-110     |
| PP       | 2-6          | 75-160     |
| PVDF     | 2-6          | 75-160     |

## Weight

| Size (inch) | d (mm) | PVC (lb) | CPVC (lb) | PP (lb) | PVDF (lb) |
|-------------|--------|----------|-----------|---------|-----------|
| 2½          | 75     | 9.5      | 9.5       | 12.0    | 12.6      |
| 3           | 90     | 21.4     | 21.4      | 19.0    | 23.6      |
| 4           | 110    | 30.0     | 30.0      | 25.0    | 32.8      |
| 6           | 160    | 59.5     | 59.5      | 55.2    | 68.3      |

## Body Bolt Torque

| Size (inch) | d (mm) | Torque (lb-in) |
|-------------|--------|----------------|
| 2½          | 75     | 221.3          |
| 3           | 90     | 247.8          |
| 4           | 110    | 265.5          |
| 6           | 160    | 354.0          |

## Definition of Connection Type

- **2½" (d75):** Spigot body with fused flange adapter and loose flange ring
- **3" - 6" (d90 - d160):** Fully molded body with integrated fixed flange

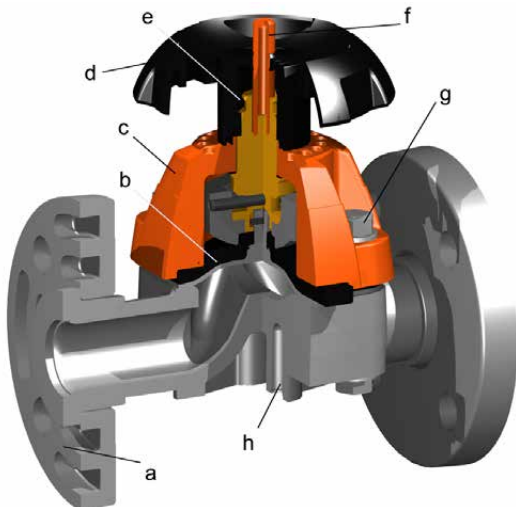
## Diaphragm Availability

| Material     | Range (inch) | Range (mm) |
|--------------|--------------|------------|
| EPDM         | 2-6          | 75-160     |
| FPM          | 2-6          | 75-160     |
| NBR          | 2-6          | 75-160     |
| CSM          | 2-6          | 75-160     |
| PTFE/EPDM    | 2-6          | 75-160     |
| PTFE/FPM     | 2-4          | 75-110     |
| PTFE-HP/EPDM | 2-6          | 75-160     |
| PTFE-HP/FPM  | 2-4          | 75-110     |

## Handwheel Closing Torque

| Size (inch) | d (mm) | Torque (lb-in) |
|-------------|--------|----------------|
| 2½          | 75     | 177            |
| 3           | 90     | 265.5          |
| 4           | 110    | 398.3          |
| 6           | 160    | 1239.1         |

## Components

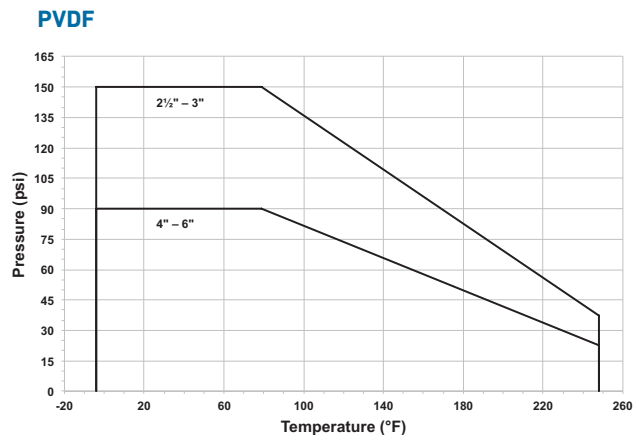
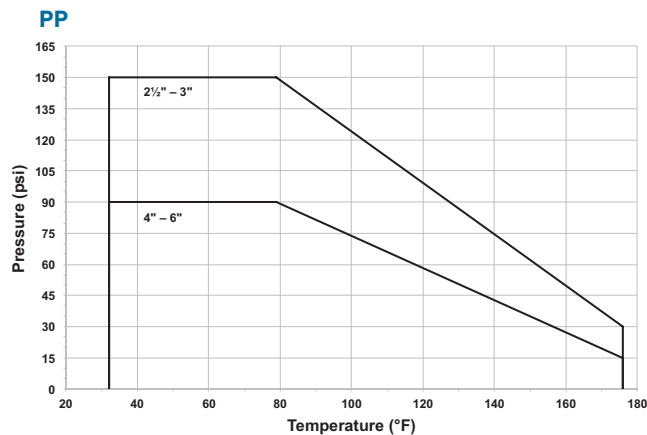
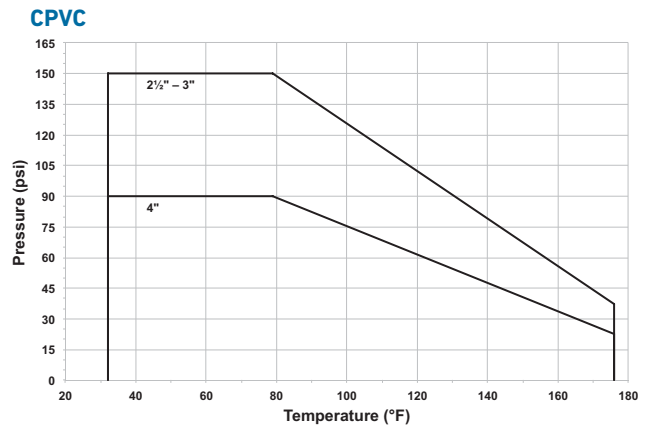
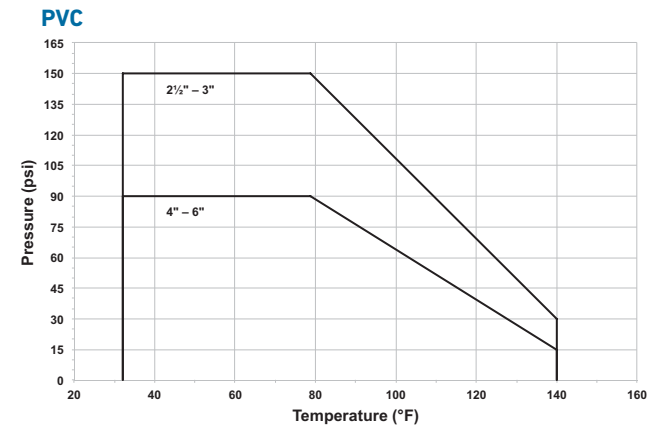


| Component  | Description        | Material                                 |
|------------|--------------------|------------------------------------------|
| a          | Body               | PVC, CPVC, PP, ABS, PVDF                 |
| b          | Diaphragm          | EPDM, FPM, NBR, CSM, PTFE/EPDM, PTFE/FPM |
| c          | Bonnet             | Glass-fill PP                            |
| d (2½")    | Handwheel          | PP                                       |
| d (3", 4") | Handwheel          | PVC                                      |
| d (6")     | Handwheel          | PPTSG                                    |
| e          | Spindle assembly   | Multiple                                 |
| f          | Position indicator | PE                                       |
| g          | Body bolt          | Stainless steel 304                      |
| h          | Threaded inserts   | Stainless steel 304                      |

# Technical Data

## Pressure Temperature Curves

The following graphs are based on a 25 year lifetime water or similar media application



### Vacuum Service

Type 317 Diaphragm Valve with an elastomeric diaphragm are rated for full vacuum service, maximum differential pressure of 15psi at 122°F. Type 317 Diaphragm Valves with a PTFE diaphragm are not rated for full vacuum service, maximum differential pressure of 8.7psi at 122°F.

### Pressure-Temperature

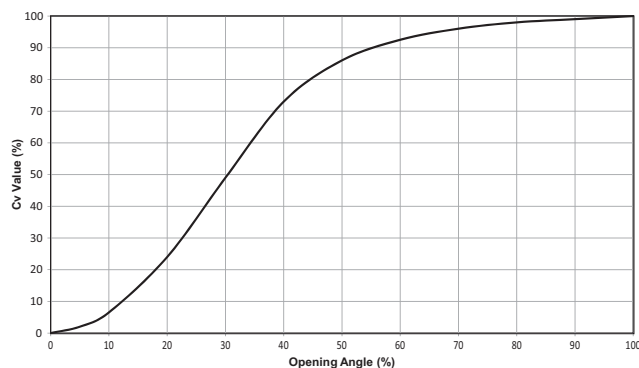
| Material | Temperature Range (°F) | Max Pressure (psi) |
|----------|------------------------|--------------------|
| PVC      | 32 to 140              | 150*               |
| CPVC     | 32 to 176              | 150*               |
| PP       | 32 to 176              | 150*               |
| PVDF     | -4 to 284              | 150*               |

\*Dependant on size as shown in P-T curves

## Flow

The following information is based on water applications at 68° F

### Flow Characteristics

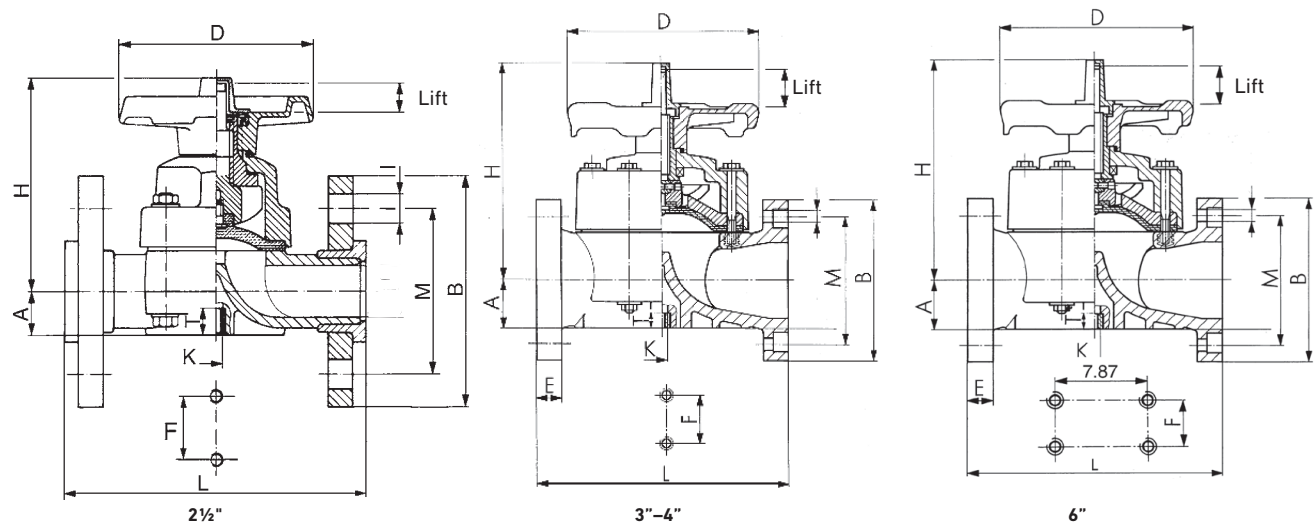


### Cv Values

| Size  | d (mm) | Cv (gal/min) |
|-------|--------|--------------|
| 2 1/2 | 75     | 69.5         |
| 3     | 90     | 119.0        |
| 4     | 110    | 189.0        |
| 6     | 160    | 422.3        |

# Dimensions

The following tables are shown in millimeters unless otherwise specified



## PVC/PP/PVDF - ANSI Flanged

| Size (inch) | A   | B (inch) | D   | E  | H   | L   | M (inch) | I (inch) | No. Bolt Holes | F   | K   | T  | Lift |
|-------------|-----|----------|-----|----|-----|-----|----------|----------|----------------|-----|-----|----|------|
| 2½          | 46  | 7.28     | 152 | 20 | 210 | 290 | 5.5      | 0.71     | 4              | 70  | M8  | 15 | 30   |
| 3           | 57  | 7.87     | 270 | 35 | 265 | 310 | 6.3      | 0.71     | 4              | 120 | M12 | 23 | 40   |
| 4           | 69  | 8.86     | 270 | 35 | 304 | 350 | 7.5      | 0.71     | 8              | 120 | M12 | 23 | 50   |
| 6           | 108 | 11.22    | 400 | 35 | 437 | 480 | 9.5      | 0.91     | 8              | 100 | M12 | 23 | 70   |

## CPVC - ANSI Flanged

| Size (inch) | A  | B (inch) | D   | E  | H   | L   | M (inch) | I (inch) | No. Bolt Holes | F   | K   | T  | Lift |
|-------------|----|----------|-----|----|-----|-----|----------|----------|----------------|-----|-----|----|------|
| 2½          | 46 | 7.28     | 152 | 20 | 210 | 290 | 5.5      | 0.71     | 4              | 70  | M8  | 15 | 30   |
| 3           | 57 | 7.87     | 270 | 35 | 265 | 310 | 6.3      | 0.71     | 4              | 120 | M12 | 23 | 40   |
| 4           | 69 | 8.86     | 270 | 35 | 304 | 350 | 7.5      | 0.71     | 8              | 120 | M12 | 23 | 50   |