

## Structural<sup>®</sup> Composite Vessels

Structural Composite Pressure Vessels offer reinforced fiberglass construction for outstanding performance and durability. Available in capacities up to 1,600 gallons, composite vessels are available with a variety of different configurations. ASME code available.



### Product Features

- For commercial and industrial water treatment and storage
- 100% composite fiberglass construction
- Outstanding performance and durability in harsh chemical environments
- Absolutely will not – and cannot – rust
- Requires little or no maintenance
- Capacities up to 1600 gallons
- Factory-backed five-year warranty
- Commercial softening & filtration

### Color Options

- AL - Almond 
- BL - Blue 
- BK - Black 
- GR - Gray 
- NA - Natural 

## Specifications

|          | Part No. | Description                 | Height<br>w/base<br>inches/mm | Height<br>w/o base<br>inches/mm | Capacity<br>Gallons/Liters | Cubic<br>Feet | Base    | Ship<br>Weight<br>lbs. |
|----------|----------|-----------------------------|-------------------------------|---------------------------------|----------------------------|---------------|---------|------------------------|
| 18" Dia. | CH30948  | 18X65 COMP 4"T              | 66.95 / 1701                  | 65.07 / 1669                    | 64 / 242                   | 8.56          | SMC     | 67                     |
|          | CH31343  | 18X65 COMP 4"T 4"B          | 73.13 / 1858                  | 65.6 / 1394                     | 64 / 242                   | 8.56          | SMC EXT | 67                     |
|          | CH31693  | 18X65 COMP 6"TF 6"BF        | 84.12 / 2137                  | 70.5 / 1791                     | 62 / 234                   | 8.29          | SMC EXT | 92                     |
| 21" Dia. | CH30950  | 21X36 COMP 4"T              | 41.7 / 1059                   | 38.2 / 970                      | 45 / 171                   | 6.06          | SMC     | 46                     |
|          | CH31573  | 21X36 COMP 4"T 4"B          | 47.5 / 1205                   | 38.25 / 970                     | 45 / 171                   | 6.06          | SMC EXT | 53                     |
|          | CH30953  | 21X62 COMP 4"T              | 67.0 / 1702                   | 63.4 / 1610                     | 84 / 318                   | 11.23         | SMC     | 95                     |
|          | CH30954  | 21X62 COMP 4"T 4"B          | 72.8 / 1848                   | 63.5 / 1613                     | 84 / 318                   | 11.23         | SMC EXT | 95                     |
| 24" Dia. | CH31043  | 24X38 COMP 4"T              | 42.6 / 1081                   | 38.5 / 978                      | 61 / 231                   | 8.15          | SMC     | 65                     |
|          | CH31053  | 24X50 COMP 4"T              | 58 / 130                      | 52.9 / 1343                     | 83.5 / 316                 | 11.16         | SMC     | 90                     |
|          | CH31611  | 24X50 COMP 4"T 4"B          | 63 / 1601                     | 52.9 / 1343                     | 83.5 / 316                 | 11.16         | SMC EXT | 90                     |
|          | CH32049  | 24X65 COMP 4"T              | 65.2 / 1655                   | 61.1 / 1552                     | 100 / 378                  | 13.36         | SMC     | 109                    |
|          | CH32481  | 24X65 COMP 4"T 4"B          | 70.1 / 257                    | 60 / 1524                       | 100 / 378                  | 13.36         | SMC EXT | 115                    |
|          | CH32129  | 24X65 COMP 6"TF             | 65 / 1651                     | 61.2 / 1556                     | 100 / 378                  | 13.36         | SMC     | 114                    |
|          | CH32139  | 24X65 COMP 6"TF 6"BF        | 79 / 2007                     | 65 / 1651                       | 100 / 378                  | 13.36         | TRIPOD  | 114                    |
|          | CH31153  | 24X72 COMP 4"T              | 74.2 / 1884                   | 70.12 / 1781                    | 118 / 451                  | 15.77         | SMC     | 109                    |
|          | CH31154  | 24X72 COMP 4"T 4"B          | 80.4 / 2043                   | 70.3 / 1786                     | 118 / 451                  | 15.77         | SMC EXT | 124                    |
|          | CH31155  | 24X72 COMP 6"TF             | 77 / 1956                     | 73.4 / 1864                     | 118 / 451                  | 15.77         | SMC     | 137                    |
|          | CH31157  | 24X72 COMP 6"TF 6"BF        | 88.5 / 2248                   | 74.5 / 1892                     | 118 / 451                  | 15.77         | TRIPOD  | 137                    |
|          |          |                             |                               |                                 |                            |               |         |                        |
| 30" Dia. | CH34177  | 30X60 COMP 6"TF             | 71.6 / 1819                   | 64.3 / 1634                     | 151 / 572                  | 20.2          | SMC EXT | 195                    |
|          | CH34178  | 30X60 COMP 6"TF 6"BF        | 82.5 / 2096                   | 68.5 / 1740                     | 151 / 572                  | 20.2          | TRIPOD  | 195                    |
|          | CH33653  | 30X72 COMP 4"T              | 77.2 / 1961                   | 69.8 / 1772                     | 187 / 708                  | 24.99         | SMC EXT | 198                    |
|          | CH31161  | 30X72 COMP 4"T 4"B          | 77.2 / 1961                   | 69.8 / 1772                     | 187 / 708                  | 24.99         | SMC EXT | 198                    |
|          | CH31162  | 30X72 COMP 6"TF             | 79.7 / 2025                   | 69.9 / 1778                     | 187 / 708                  | 24.99         | SMC EXT | 195                    |
|          | CH311613 | 30X72 COMP 6"TF 6"BF        | 88.9 / 2258                   | 74.9 / 1903                     | 187 / 708                  | 24.99         | SMC EXT | 211                    |
| 36" Dia. | CH31209  | 36X36 COMP 6"TF             | 55.3 / 1403                   | 41 / 1041                       | 118 / 447                  | 15.8          | TRIPOD  | 148                    |
|          | CH31417  | 36X57 COMP 6"TF             | 68 / 1727                     | 59.3 / 1505                     | 205 / 776                  | 27.4          | SMC EXT | 225                    |
|          | CH31418  | 36X57 COMP 6"TF 6"BF        | 77.3 / 1962                   | 63 / 1600                       | 205 / 776                  | 27.4          | TRIPOD  | 225                    |
|          | CH33652  | 36X72 COMP 4"T              | 80.4 / 2042                   | 71.8 / 1823                     | 264 / 999                  | 35.2          | SMC EXT | 264                    |
|          | CH31523  | 36X72 COMP 4"T 4"B          | 80.5 / 2045                   | 70.5 / 1791                     | 264 / 999                  | 35.2          | SMC EXT | 285                    |
|          | CH31214  | 36X72 COMP 6"TF             | 83 / 2108                     | 74.3 / 1886                     | 264 / 999                  | 35.2          | SMC EXT | 285                    |
|          | CH31217  | 36X72 COMP 6"TF 6"BF        | 90.4 / 2296                   | 76.1 / 1934                     | 264 / 999                  | 35.2          | TRIPOD  | 285                    |
|          | CH31712  | 36X72 COMP 6"TF 6"BF 4"TBFS | 89.6 / 2275                   | 75.3 / 1913                     | 264 / 999                  | 35.2          | TRIPOD  | 292                    |
|          |          |                             |                               |                                 |                            |               |         |                        |
| 42" Dia. | CH31272  | 42X72 COMP 6"TF             | 72.5 / 1842                   | 71.1 / 1807                     | 345 / 1306                 | 46.1          | SMC     | 370                    |
|          | CH31276  | 42X72 COMP 6"TF 6"BF        | 90.1 / 2289                   | 73 / 1854                       | 345 / 1306                 | 46.1          | TRIPOD  | 400                    |
|          | CH34226  | 42X72 COMP 6"TF 6"BF 4"TBFS | 94.6 / 2403                   | 77.5 / 1969                     | 345 / 1306                 | 46.1          | TRIPOD  | 415                    |



## Specifications (cont'd.)

|          | Part No. | Description                    | Height<br>w/base<br>inches/mm | Height<br>w/o base<br>inches/mm | Capacity<br>Gallons/Liters | Cubic<br>Feet | Base   | Ship<br>Weight<br>lbs. |
|----------|----------|--------------------------------|-------------------------------|---------------------------------|----------------------------|---------------|--------|------------------------|
| 48" Dia. | CH31281  | 48X72 COMP 6"TF                | 81.5 / 2071                   | 75.2 / 1909                     | 463 / 1753                 | 61.9          | SMC    | 494                    |
|          | CH31285  | 48X72 COMP 6"TF 6"BF           | 92.9 / 2360                   | 76.9 / 1953                     | 463 / 1753                 | 61.9          | TRIPOD | 494                    |
|          | CH31283  | 48X72 COMP 6"TF 6"BF 4"TBSF    | 96.75 / 2458                  | 80.75 / 2051                    | 463 / 1753                 | 61.9          | TRIPOD | 504                    |
| 63" Dia. | CH31390  | 63X67 COMP 6"TF 6"BF           | 81.4 / 2068                   | 67.1 / 1704.3                   | 600 / 2271                 | 80.2          | TRIPOD | 680                    |
|          | CH31326  | 63X86 COMP 6"TF 6"BF           | 98.5 / 2503                   | 84.1 / 2136                     | 900 / 3407                 | 120.3         | TRIPOD | 950                    |
|          | CH31327  | 63X86 COMP 16"TMWY 6"BF        | 98.9 / 2513                   | 84.5 / 2146                     | 900 / 3407                 | 120.3         | TRIPOD | 950                    |
|          | CH31292  | 63X86 COMP 16"TMWY 6"BF 4"TBSF | 99 / 2515                     | 85 / 2159                       | 900 / 3407                 | 120.3         | TRIPOD | 950                    |
|          | CH34234  | 63X116 16"TMWY 6"BF 4"TBSF     | 130.4 / 3312                  | 115.9 / 2945                    | 1250 / 4732                | 167           | TRIPOD | 1190                   |
|          | CH31607  | 63X144 16"TMWY 6"BF 4"TBSF     | 157.9 / 4012                  | 143.9 / 3656                    | 1600 / 6057                | 214           | TRIPOD | 1398                   |

\*Measurements are subject to change without notice and are for reference only.

NOTE: Flexible connections must be installed between hard piping and tank openings. Failure to install flex connection properly with the vessel will void the warranty.

NOTE: Different base options can be selected on different tank diameters. The bases selected above illustrate most common base selection.

## Material of Construction

- Polyethylene inner shell

## Operating Parameters

- Maximum operating pressure: 150 psi
- Maximum operating temperature:
  - 120°F (threaded)
  - 150°F (flanged)

## Pentair Design Parameters

- Safety factor: 4:1
- Minimum burst at 600 psi
- Tested to 250,000 cycles without leakage

## NSF Design Parameters

- Safety factor: 4:1
- Minimum burst at 600 psi
- Tested to 100,000 cycles without leakage

## ASME Design Parameters

- *Top/Bottom flange:*
  - Safety factor: 5:1
  - Minimum burst at 750 psi
  - Tested to 33,000 cycles without leakage
- *Side flange:*
  - Safety factor: 6:1
  - Minimum burst at 900 psi
  - Tested to 100,000 cycles without leakage

## Installation Tips

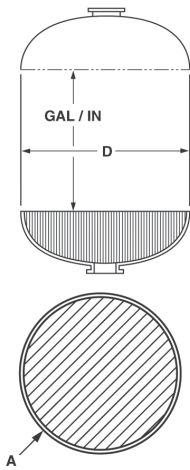
- Bolt base to floor
- Calculate height for valve and base combined (see photo)

| Fleck Valve | Tank Dia.<br>inches/mm | Adder Ht. (X)<br>inches/mm |
|-------------|------------------------|----------------------------|
| 2750        | 18/457                 | 6.5/165                    |
| 2850        | 21/533                 | 6.5/165                    |
| 2900        | 24,30/610,762          | 12/305                     |
| 3150        | 42/1067                | 10/254                     |
| 3900        | 48-63/1219-1600        | 15/381                     |

\*Measurements are subject to change without notice and are for reference only.

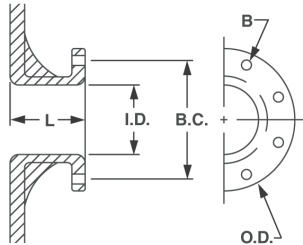


## Dome Volume (gallons) and Straight Wall Gallon per Inch



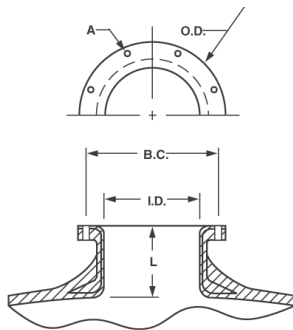
| Nominal Diameter |                     |                       |              |
|------------------|---------------------|-----------------------|--------------|
| D (inches)       | Gallons* (One Dome) | Gallon/Inch (Approx.) | A (Sq. Feet) |
| 12               | 1.0                 | 0.5                   | 0.7          |
| 13               | 1.4                 | 0.5                   | 0.9          |
| 14               | 1.7                 | 0.6                   | 1.1          |
| 16               | 2.7                 | 0.8                   | 1.3          |
| 18               | 3.7                 | 1.0                   | 1.8          |
| 21               | 6.2                 | 1.4                   | 2.4          |
| 24               | 9.3                 | 1.9                   | 3.0          |
| 30               | 18                  | 2.9                   | 4.6          |
| 36               | 33                  | 4.2                   | 6.7          |
| 42               | 52                  | 5.7                   | 9.0          |
| 48               | 74                  | 7.5                   | 12.0         |
| 63               | 168                 | 13.0                  | 20.0         |

\*Cubic Ft. = 0.1337 x Gallons



## Side Flange

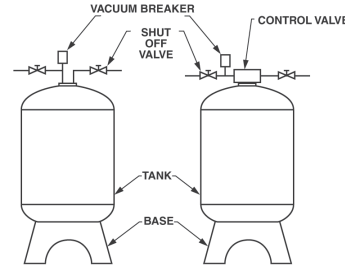
| Size    | L    | I.D. | B.C. | O.D. | A Bolt Dia. | Number of Holes | Weight (lbs.) |
|---------|------|------|------|------|-------------|-----------------|---------------|
| 4" ANSI | 4.1" | 4.0" | 7.5" | 9.0" | 0.63"       | 8               | 6.4           |



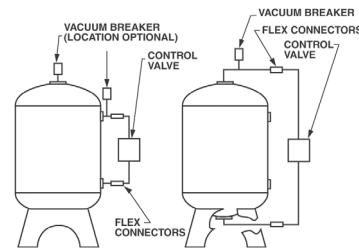
## Top and Bottom Opening Flanges/Manway

| Size           | L    | I.D.  | B.C.  | O.D.  | A Bolt Dia. | Number of Holes | Weight (lbs.) |
|----------------|------|-------|-------|-------|-------------|-----------------|---------------|
| 6" SNA         | 3.6" | 5.9"  | 8.5"  | 9.4"  | 0.31"       | 12              | 5.8           |
| 10" ANSI       | 3.7" | 10.0" | 14.3" | 16.0" | 0.88"       | 12              | 17.8          |
| 16" Manway SNA | 4.3" | 16.0" | 20.4" | 21.3" | 0.50"       | 24              | 34.0          |

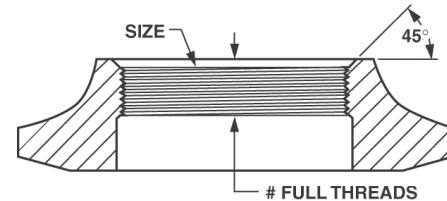
## Vacuum Breaker Installation



## Flex Connectors Installation

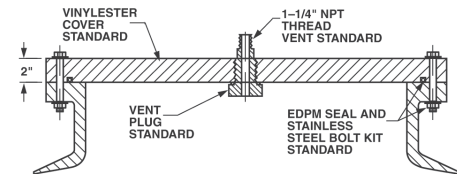


NOTE: Flexible connectors must be installed between hard piping and tank openings. These pressure vessels are treated for an internal negative pressure of 5y HG (17 Pa) vacuum below atmospheric. If negative pressure could ever exceed 5y Hg (17 Pa), an adequate vacuum breaker must also be properly installed. Failure to install flex connection properly, or improper installation of a vacuum breaker when required, may void the warranty.



## Top and Bottom Opening Threads

| Size               | Composite/ Poly Glass | Number of Full Threads | Composite |
|--------------------|-----------------------|------------------------|-----------|
| 2.5" - 8" NPSM     | 6                     | 3 min                  | 6         |
| 4" - 8" UN         | 7                     | 3 min                  | 7         |
| 4.5" - 8" Buttress | 7                     | 3 min                  | 7         |



## Manway Cover

| Material | Pressure Rating | Tapping       |
|----------|-----------------|---------------|
| CPVC     | 100 psi         | As requested  |
| VE       | 150 psi         | As shown only |