

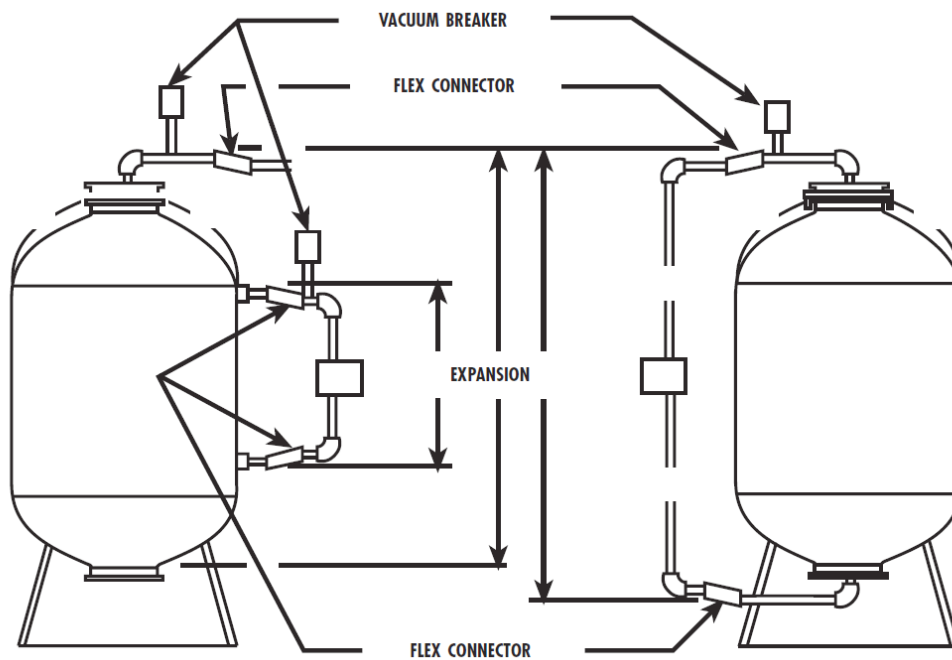


FLEXIBLE CONNECTIONS FOR PENTAIR COMPOSITE VESSELS - PIPING STANDARD PRACTICE

A Pentair composite vessel will expand when it is pressurized. The connections to the vessel need to compensate for that, in order not to overstress the vessel connectors.

Damage to the vessel due to not respecting this is not covered by warranty. Two ways to achieve this:

- **USE OF FLEXIBLE CONNECTORS:**



Flexible piping, to be installed horizontally



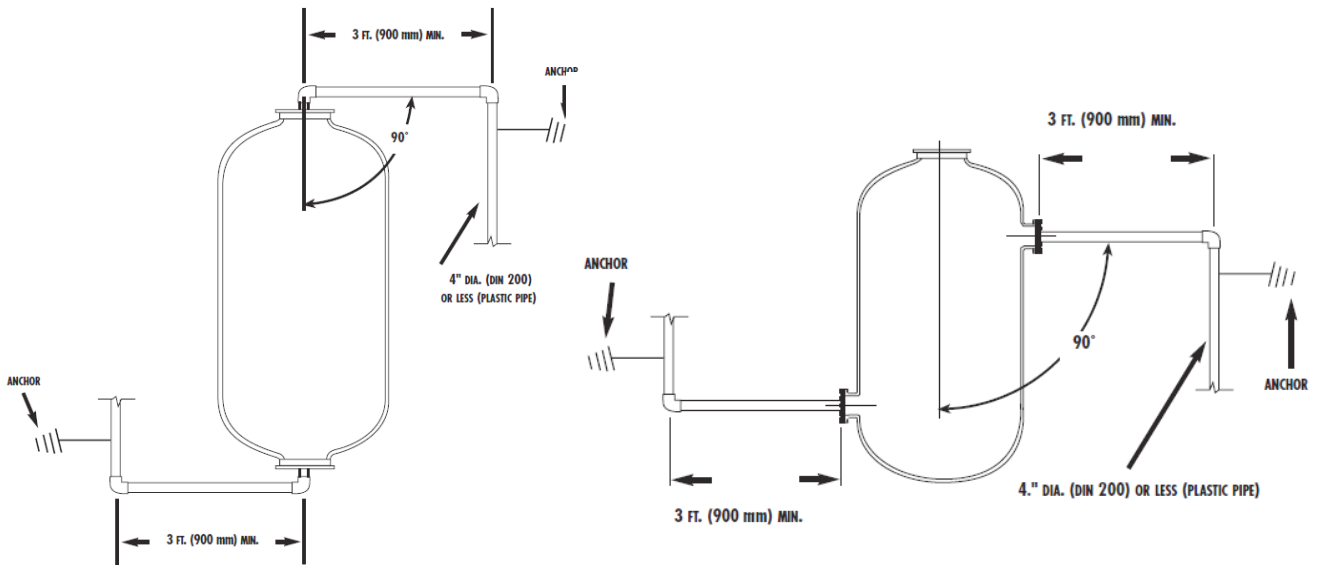
Compensator, to be installed horizontally or vertically



FLEXIBLE CONNECTIONS FOR PENTAIR COMPOSITE VESSELS - PIPING STANDARD PRACTICE

- USE OF INHERENT FLEXIBILITY IN PLASTIC PIPING:**

Plastic pipe has inherent flexibility that will compensate vessel expansion if assembled horizontally and has adequate length. Maximum pipe diameter should be 200mm.



The length of the pipe may be reduced when vessel is operating at lower pressure. See the table below:

| Pressure (bar) | Pipe length (mm) |
|----------------|------------------|
| 10 | 900 |
| 9 | 820 |
| 8 | 730 |
| 7 | 640 |
| 6 | 550 |
| 5 | 450 |
| 4 | 360 |
| 3 | 270 |
| 2 | 180 |
| 1 | 100 |