

VIEW AT CENTER SUPPORT  
CENTER VESSEL ON 2 OR 3 SUPPORTS  
AT SPAN(S) "S" : 3 SUPPORTS REQUIRED FOR LENGTHS -4 AND OVER

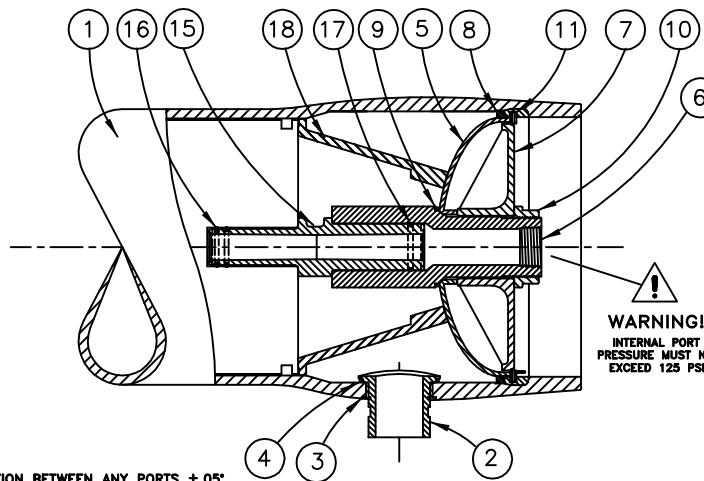
CAUTION-INCORRECT MANIPULATING WILL CAUSE SEVERE LOCAL STRESS AROUND PORT AND MAY RESULT IN LEAKS AND PREMATURE FAILURE; TAKE EVERY PRECAUTION LISTED ON REVERSE, SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

DWG REF	QTY	PART NUMBER	DESCRIPTION	MATERIAL
<b>SHELL</b>				
01	1		SHELL	Filament Wound Epoxy/Glass composites - SS Head locking grooves integrally wound in place.
02	A/R	ORDER SECTION	F/C Port	CF3M
03	A/R		Retaining Ring	300 Series Stainless Steel.
04	A/R		F/C Port Seal	Ethylene Propylene - Square Cut.
<b>HEAD</b>				
05	2	52025	Elliptical Head	316 Stainless Steel.
06	2	50935	Permeate Port	Engineering Thermoplastic.
07	2	52146	Securing Plate	Engineering Thermoplastic.
08	2	45321	Head Seal	Ethylene Propylene - Quad Seal(445)
09	2	45342	Perm Port Seal	Ethylene Propylene - Square Cut(228)
10	2	45066	Port Nut	Engineering Thermoplastic.
<b>HEAD INTERLOCK</b>				
11	2	47336	Retaining Ring	316 Stainless Steel.
<b>VESSEL SUPPORT</b>				
12	*2	52169	Saddle	Engineering Thermoplastic.
13	*2	45042	Strap Assy.	304 Stainless Steel- PVC cushion
14	4	46265	Strap screw.	5/16-18 UNC, 18-8 Stainless Steel.
<b>ELEMENT INTERFACE</b>				
15	2	A/R	Adapter	Engineering Thermoplastic.
16	4	A/R	PWT Seal	Ethylene Propylene - O - Ring
17	2	52245	Adapter seal	Ethylene Propylene - O - Ring (124)
18	1	97014	Thrust Cone	Engineering Thermoplastic.

\* 3 Each Furnished With Length Code 4, 5, 6 & 7.

**NOTES**

- \* MAX. ANGULAR VARIATION BETWEEN ANY PORTS  $\pm .05^\circ$ .
- \* DIMENSION IN INCHES (MM APPROX.)
- \* DIMENSIONS FOR REFERENCE ONLY, NOT TO BE USED FOR CONSTRUCTION UNLESS CERTIFIED.
- \* SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE.
- \* L.O.A REFERS TO OVERALL LENGTH OF THE VESSEL.
- \* EMPTY WEIGHT REFERS TO SHELL WEIGHT INCLUDING HEAD ASSEMBLIES WITHOUT MEMBRANES.



Shell Length Code	L L.O.A. IN (MM)	P Span IN (MM)	S Span IN (MM)	Empty Weight LB (KG)
1	58.25 (1480)	47 (1194)	28 X 1 (711)	67 (30)
2	98.25 (2496)	87 (2210)	56 X 1 (1422)	89 (40)
3	138.25 (3512)	127 (3226)	80 X 1 (2032)	114 (51)
4	178.25 (4528)	167 (4242)	64 X 2 (1626)	137 (62)
5	218.25 (5544)	207 (5258)	78 X 2 (1981)	160 (73)
6	258.25 (6560)	247 (6274)	92 X 2 (2337)	184 (83)
7	298.25 (7576)	287 (7290)	106 X 2 (2692)	207 (94)



**CODELINE MODEL 80A45**  
MEMBRANE HOUSING

ECN	SHEET	SIZE	NUMBER	REV
1775	1 OF 2	B	519002	U

**RATING:**

DESIGN PRESSURE.....450 PSI at 120°F  
(3.10 MPa at 49°C)

MIN. OPERATING TEMP.....20°F  
(-7°C)

FACTORY TEST PRESSURE.....CE / ASME  
675 PSI 495 PSI  
(4.65 MPa) (3.41MPa)

BURST PRESSURE.....2700 PSI  
(18.62 MPa)

**INTENDED USE**

The CodeLine Model 80A45 Fiberglass RO Pressure Vessel is designed for continuous, long-term use as a housing for reverse osmosis membrane elements to desalt typical brackish waters at pressures up to 450 psi. Any make of eight-inch nominal diameter spiral-wound element is easily accommodated; the appropriate interfacing hardware for the element specified is furnished with the vessel.

The CodeLine Model 80A45 is designed in accordance with the engineering standards of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers (ASME Code). At small additional cost, vessels can be inspected during construction by an ASME Authorized Inspector and ASME Code stamped.

The CodeLine Model 80A45 must be installed, operated and maintained in accordance with the precautions listed and good industrial practice to assure safe operation over a long service life.

The high performance reinforced plastic shell must be allowed to expand under pressure; undue restraint at support points or piping connections can cause leaks to develop in the shell. This side-ported vessel requires special precautions in mounting and connection to piping so that the vessel will not be subjected to excessive stress due to bending moments acting at the side openings in the fiberglass shell.

The end closures, incorporating close-fitting, interlocking metal components, must be kept dry and free of corrosion; deterioration can lead to catastrophic mechanical failure of the heads.

Pentair Water will assist the purchaser in determining the suitability of this standard vessel for their specific operating conditions. The final determination however, including evaluation of the standard materials of construction for compatibility with the specific corrosive environment, shall be the responsibility of the purchaser. Alternate materials with enhanced corrosion resistance are available on special order.

Specifications subject to change without notice.

**PRECAUTIONS**

- DO... read, understand and follow all instructions; failure to take every precaution will void warranty and may result in vessel failure
- DO... mount shell centered on horizontal members spaced at recommended span(s) "S" using compliant mounting hardware furnished; tighten hold down straps just snug
- DO... align and center side ports with the manifold header; correct causes of misalignment in a row of vessels connected to the same header
- DO... use flexible type grooved-end pipe couplings, Victaulic® Style 77 or equal, at sideports; allow full .125 inch gap between port and piping, and position piping to maximize flexibility of connection
- DO... provide flexibility in, and support for piping manifold so that vessel can grow in length under pressure without undue restraint; provide additional flexible joints in large pipes leading to manifold header
- DO... provide overpressure protection for vessel set at not more than 105% of design pressure
- DO... inspect end closures regularly; replace components that have deteriorated and correct causes of corrosion
- DO NOT... work on any component until first verifying that pressure is relieved from vessel
- DO NOT... make rigid piping connections to ports or clamp vessel in any way that restricts growth of fiberglass shell under pressure; ▲DIA = 0.015 in. (0.4mm) and ▲L = 0.2 in. (5mm) for a length code -7 vessel
- DO NOT... hang piping manifolds from ports or use vessel in any way to support other components
- DO NOT... tighten Permeate Port connection more than one turn past hand tight
- DO NOT... operate vessel without connecting both Permeate Ports internally to a complete set of elements or otherwise plug ports internally so that external piping connection is not subjected to feed pressure
- DO NOT... install Spacer on downstream end of vessel
- DO NOT... operate vessel without Thrust Cone installed downstream
- DO NOT... pressurize vessel until double checking to verify that the Retaining Ring is in place and fully seated.
- DO NOT... operate vessel at pressures and temperatures in excess of its rating
- DO NOT... operate vessel with permeate pressure in excess of 125 psi at 120°F (0.86 MPa at 49°C)
- DO NOT... tolerate leaks or allow end closures to be routinely wetted in any way
- DO NOT... operate at pH levels below 3 or above 10

**NOTE**

Spiral Retaining Ring Removal Tool (50303) recommended to open and close vessel.

For complete information on proper use of this vessel please refer to the 80A Series USER'S GUIDE, Bulletin 519014

**ORDERING**

Using the chart below, please check the features you require and fax them with your purchase order to our customer service department for expedited processing. For optional materials and or feature not listed below, please consult the factory for pricing and availability.

Please note that we require your membrane brand and model number when ordering. If this information is not initially available, you may provide it at a later date by checking the appropriate box below

**VESSEL LENGTH CODE - please check one**

MODEL 80A45 -1 -2 -3 -4 -5 -6 -7

**EXTERIOR FINISH - please check one**

- Standard - white high-gloss polyurethane coating over sanded surface.
- Option - optional colors are available for 50 or more vessels per order. Call factory for pricing details.

**CERTIFICATION - please check one**

- ASME Stamped and National Board Registered (please consult factory for pricing).
- CE Marked.
- NSF / ANSI-61 Certified
- Standard, Certified by Pentair Water.

**MEMBRANE BRAND AND MODEL - please check one and fill in information**

- Please supply adapters for the following membrane brand and specific model.  
Brand \_\_\_\_\_ Model \_\_\_\_\_
- Membrane brand and model information is not currently available, but will be supplied to CodeLine on or before the following date. \_\_\_\_/\_\_\_\_/\_\_\_\_

**MATERIAL AND PORT CONFIGURATIONS OPTIONS - please check one**

- Standard - all materials and port configurations per drawing 519002 on the opposite page.  
NOTE: The options listed below will increase the vessel price. Call factory for pricing details.
- Option **Ultrapure package** for ultrapure / high temperature operation. Includes:  
One 316 SS 1 1/2" permeate port with a type 3A sanitary connection. (6.3" Port Offset)  
One PET permeate port with 1" FNPT threads.  
One standard PET adapter and one solid adapter (to plug the PET permeate port).
- Option **Sanitary package** for sanitary / high temperature operation.  
Same as the ultrapure package but also includes  
Two each feed / concentrate ports with 2" type 3A sanitary connections.
- Option **High Temperature package** for high temperature operation only.  
Includes two PET permeate ports instead of the standard PVC material.
- Option **Customer specified port configuration**. Using the chart below, please indicate the custom options you require for each end of the pressure vessel (many options are required only at one end). Please consult the factory as these options will affect pricing and vessel lead time.

Serial number end	Opposite end
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

**PERMEATE PORT MATERIAL**

- Standard - PVC Thermoplastic (for applications up to 120° F)
- Option - PET Thermoplastic (for up to 176° and high back pressure operation)
- Option - 316L Stainless Steel (for up to 190° and high back pressure operation)

**PERMEATE PORT CONFIGURATION**

- Standard - 1" NPT Female Threads; 4.5" Port Offset
- Option - 3/4" NPT Female Threads; 4.5" Port Offset
- Option - 1/2" NPT Female Threads; 4.5" Port Offset
- Option - 1 1/2" IPS Grooved End; 7.71" Port Offset
- Option - 1 1/4" IPS Grooved End; 6.35" Port Offset

**FEED PORT CONFIGURATION**

- Standard - 1 1/2" IPS pipe, grooved ends, with ports in-line
  - Optional - Multi-Ports™, increased port diameter or port clocking
- Using the instructions in Order specification sheet # 519017, please fill out your feed port configuration in the space below.  
List port location first followed by port size for each choice.  
Ports are not allowed 90° from any other port size.

Serial number end	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opposite end	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PORT SIZE CODE	
D	1 1/2" GROOVED END
E	2" GROOVED END
F	2 1/2" GROOVED END
S	2" SANITARY

