RATING:

DESIGN PRESSURE ........................................ 1200 PSIG (8.27 MPa)
MAX. OPERATING TEMP. .................................. 150°F (66°C)
MIN. OPERATING TEMP. .................................. 20°F (-7°C)
FACTORY TEST PRESSURE ............................... 1800PSIG/1320 PSIG (12.41MPa)/(9.10 MPa)
QUALIFICATION PRESSURE ............................... 7200 PSI (49.64 MPa)

INTENDED USE:
The CodeLine 80U120 Fiberglass RO Pressure Vessel is designed for continuous, long term use as housing for reverse osmosis membrane elements to desalt typical sea waters at pressures up to 1200 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 80U120 is designed in accordance with the engineering standards of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers (ASME) as per Section X. At small additional cost vessels can be inspected during construction by an ASME Authorized Inspector and ASME Code stamped.

The CodeLine 80U120 must be installed, operated and maintained in accordance with the listed precautions and good industrial practice to assure safe operation over a long service life.

The high performance Filament wound FRP 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 closure, incorporating close fitting, interlocking metal components, must be kept dry and free of corrosion; deterioration can lead to catastrophic mechanical failure of the head.

Pentair 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 material 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 are subject to change without notice.

PRECAUTIONS:

DO...read, understand and follow all instructions; failure to take precaution will void warranty and may result in vessel failure;
DO...mount the shell on horizontal members at span “S” using compliant vessel supports furnished; Shim saddles if required. Tighten hold downs 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 IPS grooved-end pipe couplings, at side ports; allow full, 0.125 inch gap between port and piping, and position piping to maximize flexibility of connection;
DO...provide flexibility in, and support for piping manifolds 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...make rigid piping connections to ports or clamp vessel in any way that resists growth of fiberglass shell under pressure;
DO...do not...work on any component until first verifying that pressure is relieved from vessel;
DO...do not...operate vessel without connecting both Permeate Ports internally to complete set of elements or otherwise plug ports internally so that external piping connection is not subjected to feed pressure;
DO...do not...operate vessel without Thrust Cone installed downstream;
DO...do not...pressurize vessel until double-checking to verify that the Locking Ring is in place and fully seated;
DO...do not...operate vessel at pressure and temperature in excess of its rating;
DO...do not...operate vessel with permeate pressure in excess of 125 psi at 150°F (0.86 Mpa at 66°C);
DO...do not...tolerate leaks or allow end closures to be routinely wetted in any way;
DO...do not...operate outside the pH range 3-11.

ORDERING:

Using the chart below, please check the features you require

VEssel LENGTH CODE - please check one
MODEL 80U120 □ -1 □ -2 □ -3 □ -4 □ -5 □ -6 □ -7 □ -8

MembRane BRAND AND MODEL
☐ Please supply adapters for the following membrane brand and specific model
Brand ___________________________ Model _______________________

CERTIFICATION REQUIRED
☐ Hydro testing at 1.1 times the design pressure.
☐ ASME Stamped and National Board Registered.
☐ In compliance with the ASME Sec X, but not Code Stamped
☐ Hydro testing at 1.5 times the design pressure.
☐ CE Marked Standard.

PERMEATE PORT SELECTION

<table>
<thead>
<tr>
<th>Serial Number End</th>
<th>Size of the Permeate Port</th>
<th>Type of Connection</th>
<th>Material of Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ 1&quot;</td>
<td>□ 1.25&quot;</td>
<td>□ 1.5&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FNPT</td>
<td>Noryl</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MNPT</td>
<td>SS316L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BSPTM</td>
<td>Zeron 100</td>
</tr>
<tr>
<td>Non Serial Number End</td>
<td>□ 1&quot;</td>
<td>□ 1.25&quot;</td>
<td>□ 1.5&quot;</td>
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<tr>
<td></td>
<td></td>
<td>FNPT</td>
<td>PET/Noryl</td>
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<td></td>
<td>MNPT</td>
<td>SS316L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BSPTF</td>
<td>Zeron 100</td>
</tr>
</tbody>
</table>

Note:
- Standard offering is 1.0" FNPT in Noryl.
- 1.25" & 1.5" BSPTF, 1.25" & 1.5" FNPT connections cannot be offered

STRAIN ASSEMBLY
☐ Standard SS304 □ Optional SS316 □ Optional SS316L

FEAD/CONCENTRATE PORT SELECTION

<table>
<thead>
<tr>
<th>Material of Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ STD Super Duplex SS (CD3MWcUN)</td>
</tr>
<tr>
<td>□ Optional - CE3MN* (Cannot be offered for ASME stamped vessels)</td>
</tr>
</tbody>
</table>

Configuration
☐ Standard -1 1 5 1
- Optional –Multi port: (Refer PAGE 3 for 3”-4” for Multi ports selection).
Ports not available in 90° configurations.

Serial number end
Opposite end

BEARING PLATE MATERIAL
☐ Standard – 6061 T6 Aluminium
☐ Optional – Stainless Steel 316L

Note: Refer page-3 for optional Part numbers.
**F/C PORT & SEAL PART NUMBER**

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<thead>
<tr>
<th>Size</th>
<th>***CD3MWCuN</th>
<th>**CE3MN</th>
<th>SEAL</th>
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<tbody>
<tr>
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<td>96265</td>
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<td>3&quot;</td>
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<td>96119</td>
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</table>

**PERMEATE PORT NUMBERS & PERMPORT TO F/C PORT OFFSET DISTANCE**

<table>
<thead>
<tr>
<th>Size</th>
<th>Material</th>
<th>FNPT</th>
<th>MNPT</th>
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<th>BSPTM</th>
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<td>7.4</td>
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</tbody>
</table>

**NOTES**
- Dimensions in inches (mm approximate)
- **GRADE CE3MN AS PER SA-995 (UNS J93404)**
- **GRADE CD3MWCuN AS PER SA-995 (UNS J93386)**
- **GRADE ZERON 100 AS PER SA-479 (UNS S32760)**
- **GRADE SS-316L AS PER SA-479**
- **GRADE SS-316L AS PER SA-182**
- Optional strap assembly with SS-316 & 316L shall be supplied as per metric standards

**CODELINE BODY LABELS ARE PLACED AT 90° TO SERIAL NUMBER END AND AT 270° ON THE OPPOSITE SIDE END**

**PENTAIR**

**MODEL - 80U120**

**MEMBRANE HOUSING**

**DRAWN**

**CHECKED**

**APPROVED**

**REV.** B

**SCALE** A3

**SHEET 3 OF 3**