**CodeLine Pressure Vessel model 80U30**

**Customer Name**

**Project Name**

**Total Quantity**

**Port Configuration Details**

**Vessel Quantity**

**Dash**

- **L (IN/MM)**
- **P (IN/MM)**
- **S (IN/MM)**
- **Approx Weight (LB/KG)**

- **-1**
  - 62.65 (1591)
  - 48 (1219)
  - 10X1 (254)
  - 123 (56)

- **-2**
  - 102.65 (2607)
  - 88 (2235)
  - 50X1 (1270)
  - 132 (60)

- **-3**
  - 142.65 (3625)
  - 128 (3351)
  - 80X1 (2032)
  - 139 (63)

- **-4**
  - 182.65 (4639)
  - 168 (4267)
  - 64X2 (1626)
  - 148 (67)

- **-5**
  - 222.65 (5655)
  - 208 (5283)
  - 70X2 (1891)
  - 157 (71)

- **-6**
  - 262.65 (6671)
  - 248 (6299)
  - 92X2 (2337)
  - 165 (75)

- **-7**
  - 302.65 (7692)
  - 288 (7315)
  - 106X2 (2692)
  - 174 (79)

- **-8**
  - 342.65 (8703)
  - 328 (8331)
  - 120X2 (3048)
  - 183 (83)

**NOTES:**

- Max. Angular variation between any ports ±10°.
- **Shell, exterior coated with white, high gloss polyurethane paint.**
- **Calibration in inches with appro.**
- Not to be used for construction unless certified and made by CodeLine.

**WARNING:**

- **Inlet Till:** Do not exceed 125 PSI.

**CodeLine®**

**Pentair Water**

**Drawn**

- **Date:**
- **Pos:**

**Checked**

- **Date:**
- **Mid:**

**Approved**

- **Date:**
- **Rm:**

**ECN**

- **No.:**
- **Rev.:**

**Spec:**

- **Rev.:**
- **Date:**

**CodeLine - 80U30**

**Membrane Housing**

**Codeline**

- **Date:**
- **Sheet:**
### Rating:

**Design Pressure:** 300 PSIG at 190°F (2.1 MPa at 88°C)

**Min. Operating Temp.:** 20°F (-7°C)

**Factory Test Pressure:** CE / ASME

**450 PSIG / 330 PSIG**

(3.10 MPa) (2.27 MPa)

**Qualification Pressure:** 1800 PSI (12.4 MPa)

### Intended Use:

The CodeLine 80U30 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 300 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 80U30 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 80U30 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.

### Precautions:

Do...read, understand and follow all instructions; failure to take every 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 saddle braces if required. 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 side ports; allow full, 0.15 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 no more than 105% of design pressure.

Do...inspect end closures regularly; replace components that have deteriorated and correct causes of corrosion.

Do...Lubricate seals sparingly, using nonpetroleum based lubricants, i.e. Parker Super O-lube®, Glycerin or suitable silicone based lubricants.

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 resists growth of fiberglass shell under pressure;

**Max. DIA = 0.015 in. (0.4mm) and Max. L = 0.2 in. (6mm) for length code –8 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 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 Locking Ring is in place and fully seated.

Do NOT...operate vessel at pressure and temperature in excess of its rating.

Do NOT...operate vessel with permeate pressure in excess of 125 psi at 190°F (0.86 Mpa at 88°C).

Do NOT...tolerate leaks or allow end closures to be routinely wetted in any way.

Do NOT...operate outside the pH range 3-10.

### Ordering:

Using the chart below, please check the features you require.

**Vessel Length Code – please check one**

- **Model 80U30**
  - □ -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**

- □ ASME Stamped and National Board Registered.
- □ CE Marked Standard.
- □ Certified by Pentair water.
- □ In compliance with the ASME Sec X but not Code Stamped.
- □ Hydro testing at 1.1 times the design pressure.
- □ Hydro testing at 1.5 times the design pressure.

### Permeate Port Selection

#### Serial Number End

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

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

### Strap Assembly

- □ Standard SS304 | □ Optional SS316 | □ Optional SS316L

### Feed/Concentrate Port Selection

**Material of Construction**

- □ CF3M | □ Optional Duplex SS (CD3MN) | □ Optional Super Duplex SS (CD3MWN)

**Configuration**

- □ Standard - CF3M H51
  - □ Optional – Multi ports (Refer SPEC. SHEET/PM/4” for Multi port 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.
### Strap Assembly Part Numbers

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DIM &quot;A&quot;</th>
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<tbody>
<tr>
<td>45066</td>
<td>Standard Port nut</td>
</tr>
<tr>
<td>45042</td>
<td>Port Retainer Ring</td>
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</table>

### Permeate Port & Seal Part Numbers

#### Permeate Port Size

<table>
<thead>
<tr>
<th>SIZE</th>
<th>MATERIAL</th>
<th>PART NUMBER</th>
<th>DIM &quot;A&quot;</th>
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</thead>
<tbody>
<tr>
<td>1.0&quot;</td>
<td>SS316L</td>
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<td>96346</td>
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<td>1.5&quot;</td>
<td>SS316L</td>
<td>96879</td>
<td>97350</td>
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### Permeate Port Retainer Ring & Port Nut Part Numbers

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<tr>
<th>PART NUMBER</th>
<th>DIM &quot;A&quot;</th>
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</thead>
<tbody>
<tr>
<td>45066</td>
<td>Standard Port nut</td>
</tr>
<tr>
<td>45042</td>
<td>Port Retainer Ring</td>
</tr>
</tbody>
</table>

### Permeate Port Size & Membrane Housing

#### Material Used

- **SS304**
- **SS316**
- **SS316L**

### F/C Port & Seal Part Numbers

<table>
<thead>
<tr>
<th>SIZE</th>
<th>MATERIAL</th>
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<th>PART NUMBER</th>
<th>PART NUMBER</th>
<th>PART NUMBER</th>
<th>PART NUMBER</th>
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<tr>
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</table>

### Permeate Port Part Numbers & Permport to F/C Port Offset Distance

<table>
<thead>
<tr>
<th>SIZE</th>
<th>MATERIAL</th>
<th>PART NUMBER</th>
<th>DIM &quot;A&quot;</th>
<th>PART NUMBER</th>
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<th>PART NUMBER</th>
<th>DIM &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
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<td>PET/NORYL</td>
<td>96263</td>
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### Sealing Plate Part Numbers

- **PET/NORYL**: 96266
- **SS316L**: 97444
- **ZERON 100**: 96648

### Bearing Plate Part Numbers

- **PET/NORYL**: 96156
- **SS316L**: 97346

### Sealing Plate Part Numbers

- **PET/NORYL**: 96266
- **SS316L**: 97444
- **ZERON 100**: 96648

### Footnotes

- GRADE CF3M PER ASME SA-351/316L AS PER SA-479
- GRADE CD3MN AS PER ASME SPEC UUNS-S32760 SA-395 (UNS-J92205)
- GRADE CD3MWCU N AS PER ASME SPEC SA-995 (J93380)
- GRADE ZERON 100 AS PER ASTM-479

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