<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>99218</td>
<td>SHELL</td>
<td>Filament Wound Epoxy/Glass composite - Head locking grooves integrally wound in place.</td>
</tr>
<tr>
<td>52169</td>
<td>Saddle</td>
<td>Engineering Thermoplastic.</td>
</tr>
<tr>
<td>96162</td>
<td>Permeate Port</td>
<td>Ethylene Propylene.</td>
</tr>
<tr>
<td>96000</td>
<td>Head Seal</td>
<td>Ethylene Propylene - O - Ring.</td>
</tr>
<tr>
<td>45042</td>
<td>Strap Assy.</td>
<td>304 Stainless Steel-PVC Cushion.</td>
</tr>
<tr>
<td>46265</td>
<td>Strap screw</td>
<td>5/16-18 UNC, 2.5&quot;L,18-8 Stainless Steel.</td>
</tr>
<tr>
<td>96158</td>
<td>Bearing Plate</td>
<td>9061-16 as per SB-221.</td>
</tr>
<tr>
<td>96160</td>
<td>Sealing Plate</td>
<td>Engineering Thermoplastic.</td>
</tr>
<tr>
<td>45036</td>
<td>Port Nut</td>
<td>Engineering Thermoplastic.</td>
</tr>
<tr>
<td>46042</td>
<td>Strap Assy.</td>
<td>304 Stainless Steel-PVC Cushion.</td>
</tr>
<tr>
<td>46265</td>
<td>Strap screw</td>
<td>5/16-18 UNC, 2.5&quot;L,18-8 Stainless Steel.</td>
</tr>
</tbody>
</table>

**Vessel Support**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
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<td>304 Stainless Steel-PVC Cushion.</td>
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<td>46265</td>
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<td>5/16-18 UNC, 2.5&quot;L,18-8 Stainless Steel.</td>
</tr>
</tbody>
</table>

**Element Interface**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>52245</td>
<td>Adapter seal</td>
<td>Ethylene Propylene - O - Ring.</td>
</tr>
<tr>
<td>96163</td>
<td>Thrust Cone</td>
<td>Engineering Thermoplastic.</td>
</tr>
</tbody>
</table>

**Notes:**

1. MAX. ANGULAR VARIATION BETWEEN ANY PORTS ±0.5°.
2. DIMENSIONS IN INCHES (MM APPROX).
RATING:

Design Pressure.........................................................300 PSIG
(2,074 PSI)
Max. Operating Temp..................................................190°F
(88°C)
Min. Operating Temp......................................................20°F
(-7°C)
Factory Test Pressure................................................CE / ASME
450 PSIG /330 PSIG
(3.1 MPa)/(2.27 MPa)
Qualification Pressure...............................................1800 PSI
(12.4 MPa)

INTENDED USE:
The CodeLine 80S30 Fiberglass RO Pressure Vessel is

The CodeLine 80S30 is designed in accordance with the
equipment 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 80S30 must be installed, operated and
maintained in accordance with the listed precautions and
good industrial practice to assure safe operation over a long
life service.

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-porteed 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
caridges. 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
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 saddles 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 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... 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;
***ADIA = 0.015 in. (0.4nm) and
***DL = 0.2 in. (6mm) for a 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 tight hand
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 3-11.

For complete information on proper use of the vessel
Please refer to the 80S Series USER’S GUIDE 94182.

ORDERING:
Using the chart below, please check the features you require

Vessel Length Code – please check one
MODEL 80S30 □ -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.
□ Certified by Pentair

Permeate Port Selection

Serial Number End
Size of the Permeate Port □ 1” □ 1.25” □ 1.5”
Type of Connection □ FNPT □ MNPT □ BSPTM □ BSPTF □ IPS GROOVED □ SANITARY
Material of Construction □ Noryl □ SS316L □ Zeron 100

Non Serial Number End
Size of the Permeate Port □ 1” □ 1.25” □ 1.5”
Type of Connection □ FNPT □ MNPT □ BSPTM □ BSPTF □ IPS GROOVED □ SANITARY
Material of Construction □ Noryl □ SS316L □ Zeron 100

Note:
• Standard offering is 1.0” FNPT in Noryl.
• 1.25” & 1.5” BSPTF; 1.25” & 1.5” FNPT and 1.25” SANITARY connections cannot be offered
• Sanitary permeate port cannot be offered in Noryl

Strap Assembly
□ Standard SS304 □ Optional SS316 □ Optional SS316L

Feed/Concentrate Port Selection
Material of Construction □ Standard CF3M □ Optional Duplex SS (CD3MN)
□ Optional Super Duplex SS (CD3MWCuN)

Configuration □ Standard - CF3M 1D5D
□ Optional – Multi ports ( Refer SPEC.SHEET/PM/1.5”-3”for Multi port selection)

Serial number end
□ □ □ □ □ □ □ □ □ □
Opposite end
□ □ □ □ □ □ □ □ □ □

Adapter Kits

Up Stream Down Stream

Authorized by Pentair

Port Size Code
D □ 1½” GROOVED END
E □ 2” GROOVED END
F □ 2½” GROOVED END

Note: Please refer to 99321 for sanitary details and refer page-3 for optional Part numbers.

DWG. NO. 99160-V. © PENTAIR PAGE 2 OF 3.
### Permeate Port Assembly Part Numbers

<table>
<thead>
<tr>
<th>Size</th>
<th>Port Material</th>
<th>B.P. Part Number</th>
<th>B.P. Dim &quot;A&quot;</th>
<th>F.C. Port Nut Number</th>
<th>F.C. Port Nut Dim &quot;A&quot;</th>
<th>C.F. Port Offset Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0&quot;</td>
<td>SS316L</td>
<td>96156</td>
<td>97346</td>
<td>96160</td>
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<tr>
<td>1.5&quot;</td>
<td>SS316L</td>
<td>96879</td>
<td>97350</td>
<td>96477</td>
<td>96477</td>
<td>96477</td>
</tr>
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</table>

### Strap Assembly Part Numbers

- SS304
- SS316
- SS316L

<table>
<thead>
<tr>
<th>Standard Port Nut</th>
<th>Port Retainer Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>45042</td>
<td>46926</td>
</tr>
</tbody>
</table>

### Bearing Plate Part Numbers

- Standard used for Aluminum BP
- Optional used for SS316L BP

### Sealing Plate Part Numbers

- Standard used for Aluminum BP
- Optional used for SS316L BP

### Permeate Port & Seal Assembly Part Numbers

<table>
<thead>
<tr>
<th>Size</th>
<th>Material</th>
<th>Noryl Part Number</th>
<th>Noryl Dim &quot;A&quot;</th>
<th>Noryl Dim &quot;B&quot;</th>
<th>Zeron 100 Part Number</th>
<th>Zeron 100 Dim &quot;A&quot;</th>
<th>Zeron 100 Dim &quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0&quot;</td>
<td>SS316L</td>
<td>96162</td>
<td>5.5</td>
<td>97349</td>
<td>97352</td>
<td>5.5</td>
<td>97356</td>
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<tr>
<td>1.5&quot;</td>
<td>SS316L</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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</tbody>
</table>

### BEARING PLATE PART NUMBERS

<table>
<thead>
<tr>
<th>Size</th>
<th>Standard Port Nut</th>
<th>Port Retainer Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0&quot;</td>
<td>45042</td>
<td>46926</td>
</tr>
<tr>
<td>1.5&quot;</td>
<td>45247</td>
<td></td>
</tr>
</tbody>
</table>

### SEALING PLATE PART NUMBERS

- Standard used for Aluminum BP
- Optional used for SS316L BP

### Footnotes:

- Dimension in inches (MM Approx.)
- Grade CF3M as per SA-351.
- Grade CD3MN as per SA-995 (UNS-J82205).
- Grade CD3MWCuNi as per SA-995 (J 83380).
- Grade Zeron 100 as per SA-479.
- Grade SS316L as per SA-182.

- Optional Strap Assembly with SS-316 & 316L shall be supplied as per metric standards.