The CodeLine 80S15 Fiberglass RO Pressure Vessel is designed for continuous, long term use as housing for reverse osmosis membrane elements to desalt typical brackish waters at pressures up to 150 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 80S15 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 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.

**RATING:**

- **DESIGN PRESSURE:** 150 PSIG (1.0 MPa)
- **MAX. OPERATING TEMP.:** 190°F (88°C)
- **MIN. OPERATING TEMP.:** 20°F (-7°C)
- **FACTORY TEST PRESSURE:** CE/ASME 225 PSIG /165 PSIG (1.6 MPa)/(1.13 MPa)
- **QUALIFICATION PRESSURE:** 900 PSI (6.2 MPa)

**INTENDED USE:**

The CodeLine 80S15 Fiberglass RO Pressure Vessel is designed for continuous, long term use as housing for reverse osmosis membrane elements to desalt typical brackish waters at pressures up to 150 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 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.

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; Shimmed 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 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;
- ***ADIA = 0.015 in. (0.4mm) and ***AL = 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 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 3-11.

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 80S15 □ -1 □ -2 □ -3 □ -4 □ -5 □ -6 □ -7 □ -8

**MEMBRANE BRAND AND MODEL**

- Please supply adapters for the following membrane brand and specific 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

**PERMATE PORT SELECTION**

**SIZE OF THE PERMEATE PORT**

- **Type of Connection:** □ FNPT □ MNPT □ BSPTM □ BSPTF □ IPS GROOVED □ SANITARY
- **Material of Construction:** □ Noryl □ SS316L □ Zeron 100

**SERIAL NUMBER END**

- **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**

- **Type of Connection:** □ 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)

**PORT SIZE CODE**

- **Serial number end**
- **Opposite end**
- **BEARING PLATE MATERIAL**
- □ Standard – 6061 T6 Aluminum
- □ Optional – Stainless Steel 316L

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

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
**BEARING PLATE PART NUMBERS**

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

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

**NOTES**
- DIMENSION IN INCHES (MM APPROX.)
- "GRADE CF3M AS PER SA-351"
- "GRADE CD3MN AS PER SA-995 (UNS-J92205)"
- "GRADE CD3MWCU AS PER SA-995 (UNS-J 93380)"
- "GRADE ZERON 100 AS PER SA-479"
- "GRADE SS-316L AS PER SA-479"
- "GRADE SS-F316L AS PER SA-182"
- "OPTIONAL STRAP ASSEMBLY WITH SS-316 & 316L MATERIAL SHALL BE SUPPLIED AS PER METRIC STANDARDS"