

600
PSI

| DWG REF | QTY | PART NUMBER | DESCRIPTION | MATERIAL |
|--------------------------|-----|---------------|--------------------------|--|
| SHELL | | | | |
| 1* | 1 | REFER TABLE 1 | SHELL | Filament Wound Epoxy/Glass composite - Head locking grooves integrally wound in place. |
| 2.1* | A/R | REFER PAGE 3 | F/C Port | SA-351 CF3M |
| 2.2 | A/R | REFER PAGE 3 | FCP retainer Ring 2 turn | Stainless Steel 316 |
| 3 | A/R | REFER PAGE 3 | F/C Port Seal | Ethylene Propylene |
| HEAD | | | | |
| 4 | 2 | 196660 | Bearing Plate Assembly | - |
| 4.1* | 1 | 196464 | Bearing Plate | SB-221 A96061-T6 |
| 4.2 | 1 | 196661 | Danger Label | - |
| 5 | 2 | 96160 | Sealing Plate | Engineering Thermoplastic. |
| 6 | 2 | 96162 | Permeate Port | Engineering Thermoplastic. |
| 7 | 2 | 45066 | Port Nut | Engineering Thermoplastic. |
| 8 | 2 | 196223 | Head Seal | Ethylene Propylene - O - Ring |
| 9 | 2 | 196215 | Perm Port Seal | Ethylene Propylene - O - Ring |
| HEAD INTERLOCK | | | | |
| 10* | 2 | 47336 | Spiral Ring | SA-479 SS 316 |
| VESSEL SUPPORT | | | | |
| 11 | 2* | 52169 | Saddle | Engineering Thermoplastic. |
| 12 | 2* | 45042 | Strap Assy. | 304 Stainless Steel-PVC Cushion. |
| 13 | 4** | 46265 | Strap screw. | 5/16-18 UNC,2.5"-L, 304 Stainless Steel. |
| ELEMENT INTERFACE | | | | |
| 14 | 2 | A/R | Adapter | Engineering Thermoplastic. |
| 15 | 2 | 196222 | Adapter seal | Ethylene Propylene - O - Ring |
| 16 | 4 | A/R | PWT Seal | Ethylene Propylene - O - Ring |
| 17 | 1 | 96163 | Thrust Cone | Engineering Thermoplastic. |

*3 & **6 each furnished with length code 4,5,6,7 & 8.

GENERAL NOTES:

1. MAX. ANGULAR VARIATION BETWEEN ANY PORT $\pm 0.5^\circ$.
2. DIMENSION IN INCHES (MM APPROX.).
3. SHELL EXTERIOR COATED WITH WHITE RAL 9003, HIGH GLOSS POLYURETHANE PAINT.
4. ITEM 18 DOWNSTREAM ONLY.
5. NOT TO BE USED FOR CONSTRUCTION UNLESS CERTIFIED BY PENTAIR.
6. * ASME PARTS.

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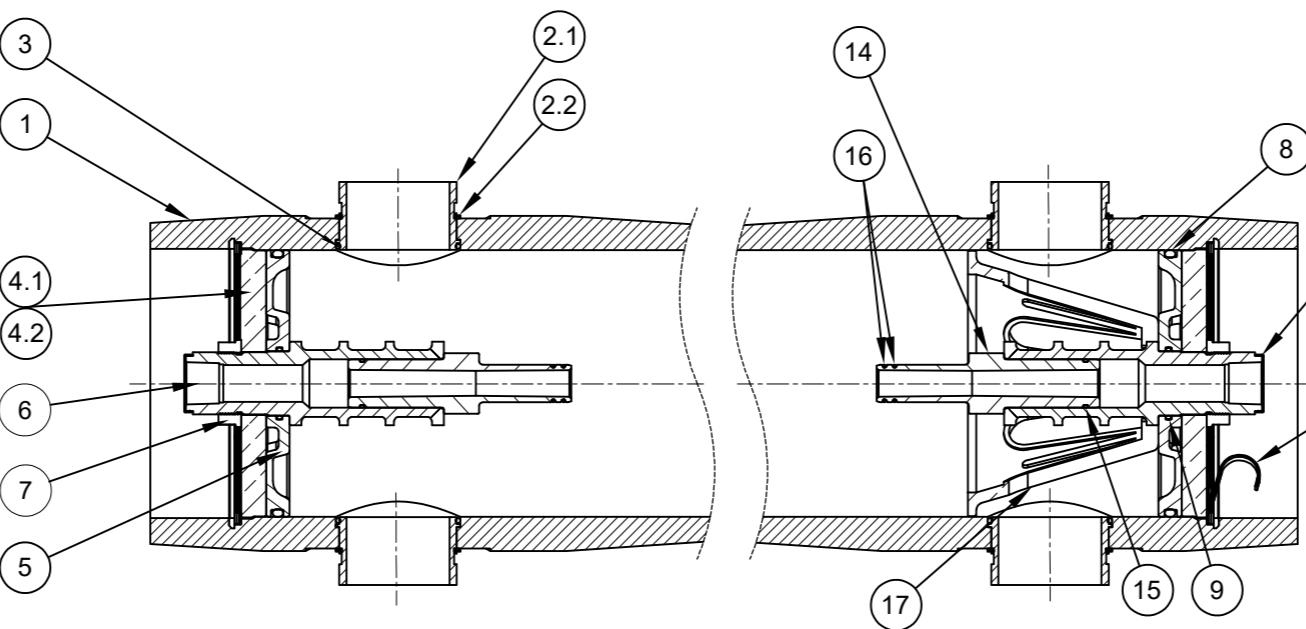
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VIEW AT CENTER SUPPORT

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

CAUTION: INCORRECT MANIFOLDING WILL
CAUSE SEVERE LOCAL STRESS AROUND
PORT AND MAY RESULT IN LEAKS AND
PREMATURE FAILURE; TAKE EVERY
PRECAUTION LISTED ON PAGE-2



SECTION THROUGH END CLOSURE

| PORT SIZE CODE |
|----------------------|
| D 1 1/2" GROOVED END |
| E 2" GROOVED END |
| F 2 1/2" GROOVED END |
| G 3" GROOVED END |

| NO. OF PORTS | PORT LOCATION | VESSEL QTY. |
|--------------|---------------|-------------|
| | | |
| | | |
| | | |
| | | |

| Table-1 | | | | |
|---------|-----------|---------------|-----------|---|
| Sr. No. | Mfg Model | Shell Drawing | Port Size | Bell OD in (mm) "B" FCPort Height in (mm) "H" |
| 1 | 80KG60 | 200143 | up to 3in | 10.75 (273) (162) 6.38 (10.75) (273) (162) |

| Dash Length | L IN(MM) | P IN(MM) | S IN(MM) |
|-------------|---------------|------------|--------------|
| -1 | 59.63 (1515) | 46 (1168) | 8X1 (203) |
| -2 | 99.63 (2531) | 86 (2184) | 48X1 (1219) |
| -3 | 139.63 (3547) | 126 (3200) | 80X1 (2032) |
| -4 | 179.63 (4563) | 166 (4216) | 64X2 (1626) |
| -5 | 219.63 (5579) | 206 (5232) | 78X2 (1981) |
| -6 | 259.63 (6595) | 246 (6248) | 92X2 (2337) |
| -7 | 299.63 (7611) | 286 (7264) | 106X2 (2692) |
| -8 | 339.63 (8627) | 326 (8280) | 120X2 (3048) |

| | | | |
|--------------|---------|--------------------------------|---------------|
| DRAWN BY: | AS | DRAWING DESCRIPTION: | DRAWING NO.: |
| DATE: | 19APR24 | MODEL - 80K60 MEMBRANE HOUSING | 200241 C |
| CHECKED BY: | KPS | CUSTOMER NAME: | VESSEL MODEL: |
| DATE: | 19APR24 | - | 80K60 |
| APPROVED BY: | FF | PROJECT NAME: | TOTAL QTY: |
| DATE: | 19APR24 | - | - |
| PCO NO.: | 547811 | CUSTOMER P.O.#: | |
| REV. DATE: | 16OCT25 | SIZE: | PAGE NO.: |
| | | A3 | 01 OF 03 |
| | | SCALE: | |

RATING:

DESIGN PRESSURE / MAWP.....600 PSI (4.14 MPa)
 MAX. ALLOWABLE TEMP.....190°F (88°C)
 MIN. ALLOWABLE TEMP.....20°F (-7°C)
 FACTORY TEST PRESSURE.....660 PSI (4.55 MPa)
 QUALIFICATION PRESSURE3600 PSI (24.82 MPa)

INTENDED USE:

The CodeLine 80K60 Fiberglass RO Pressure Vessel is designed for long-term, continuous use as a housing for reverse osmosis membrane elements, enabling the desalination of typical seawater at pressures reaching 600 psi. It can easily accommodate any make of eight-inch nominal diameter spiral-wound element, and the necessary interfacing hardware for the specified element is included with the vessel.

The CodeLine 80K60 is manufactured 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, Edition 2023. The F/C port, bearing plate, and quick-release spiral ring are designed in compliance with ASME Section VIII, Division I, Edition 2023.

At a small additional cost, vessels can be inspected during construction by an ASME Authorized Inspector and ASME Code stamped.

To ensure safe operation over an extended service life, the CodeLine 80K60 must be installed, operated, and maintained according to the specified precautions and sound industrial practices.

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 during mounting and connection to piping so that it is not subjected to excessive stress caused by 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. However, the final determination, 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.

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. Glycerine or suitable 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;
 *** Δ DIA = 0.015 in. (0.4mm) and
 *** Δ L = 0.2 in. (5mm) 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 Locking bolts are fully tightened.

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.

DO NOT...operate outside the pH range 2-12 for cleaning.

DO NOT...exceed 43.2 hours in a year for cleaning with above mentioned pH range.

For complete information on proper use of the vessel
 Please refer to the 80K Series USER'S GUIDE 201424.

Specifications are subject to change without notice.

GENERAL NOTES:

1. **WEIGHTS GIVEN IN THE TABLE ARE FOR HIGHEST CONFIGURATION AND WILL VARY WITH CHANGE IN CONFIGURATION.

ORDERING:

Using the chart below, please check the features you require

VESSEL LENGTH CODE – please check one

MODEL 80K60 -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.
 CE Marked – MODULE-D1, CATEGORY-2.
 ASME Stamped and National Board Registered.

FEED/CONCENTRATE PORT SELECTION

Material of Construction

CF3M Duplex (CD3MN)
 Super Duplex (CD3MWCuN)

Configuration

1G5G
 Multi ports:

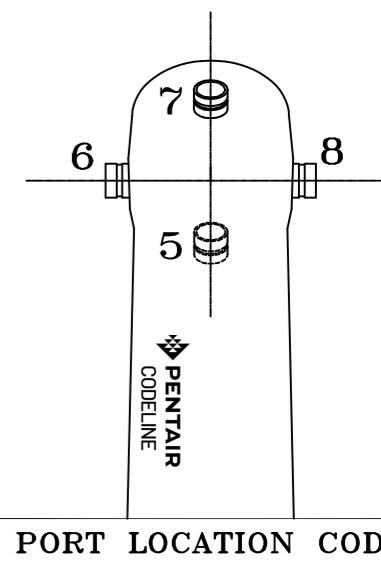
Serial number end



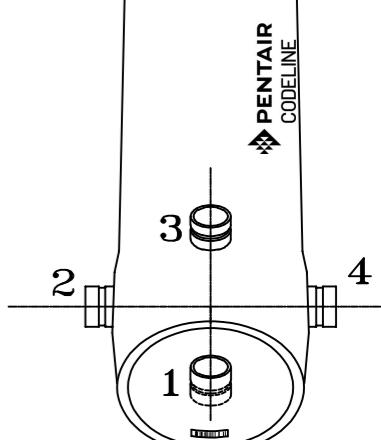
Opposite end



| Approx Weight LB(KG) | |
|----------------------|------------------|
| Dash Length | Up to 3" FC Port |
| -1 | 145 (66) |
| -2 | 164 (74) |
| -3 | 182 (83) |
| -4 | 200 (91) |
| -5 | 218 (99) |
| -6 | 236 (107) |
| -7 | 255 (116) |
| -8 | 273 (124) |



PORT LOCATION CODE



Serial Number End

| ADAPTER KITS | |
|--------------|-------------|
| UP STREAM | DOWN STREAM |
| | |

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

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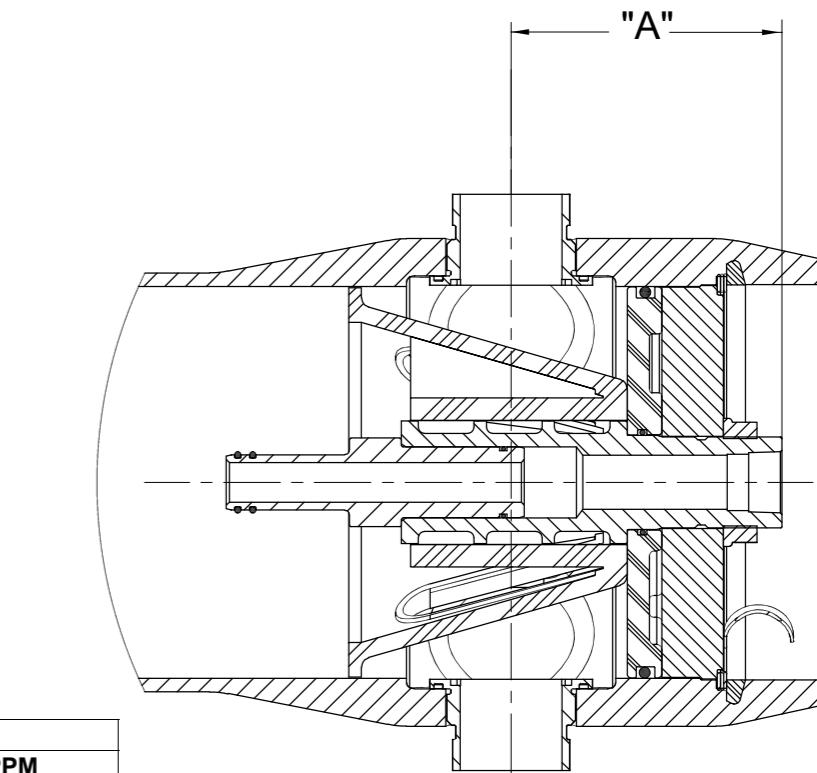
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| | | A3 | NONE | 02 OF 03 |

| 80KG60 F/C PORT ⁺⁺ & SEAL PART NUMBER | | | | | |
|--|----------|--------------|-------------|--------|----------------|
| SIZE | STD. MOC | OPTIONAL MOC | | SEAL | RETAINING RING |
| | *CF3M | **CD3MN | ***CD3MWCuN | | |
| 1.5" | 196844 | 196873 | 196916 | 196633 | 98765 |
| 2.0" | 196842 | 196870 | 196914 | 196634 | 196841 |
| 2.5" | 196839 | 196871 | 196913 | 196635 | 196838 |
| 3.0" | 196817 | 196708 | 196723 | 196641 | 196595 |

| STRAP ASSEMBLY PART NUMBERS | | |
|-----------------------------|--------------------|--------------------|
| SS304 | SS-316 | SS-316L |
| 45042 | 46926 ⁺ | 94371 ⁺ |

| PERM PORT RETAINER RING & PORT NUT PART NUMBERS | | | |
|---|--------------------|---------------------------|-------|
| 1.0" / 1.25" | Standard Port nut | Engineering Thermoplastic | 45066 |
| 1.5" | Port Retainer Ring | Stainless Steel | 45247 |

| ++ BEARING PLATE PART NUMBERS | | |
|-------------------------------|-----------|-------------------------|
| PERMEATE PORT SIZE | ALUMINIUM | SS F316L ^{###} |
| 1.0"/1.25" | 196660 | 195286 |
| 1.5 | 195287 | 195288 |



| PERMEATE PORT PART NUMBERS & PERMPORT TO F/C PORT OFFSET DISTANCE FOR P1 (STD) | | | | | | | | | | | | | | | |
|--|-------------|-------------|---------|-------------|---------|-------------|---------|-------------|---------|-------------|---------|-------------|---------|-------------|---------|
| SIZE | MATERIAL | FNPT | | MNPT | | BSPTF | | BSPTM | | IPS GROOVED | | BSPPF | | BSPPM | |
| | | PART NUMBER | DIM "A" |
| 1.0" | NORYL | 96162 | 6.0 | 97659 | 7.0 | 96301 | 6.0 | 97660 | 7.0 | 97661 | 7.3 | 96379 | 6.0 | NA | NA |
| | SS 316L # # | 96752 | 6.0 | 97347 | 7.0 | 97351 | 6.0 | 97355 | 7.0 | 97322 | 7.3 | NA | NA | NA | NA |
| | #ZERON 100 | 97349 | 6.0 | 97348 | 7.0 | 97352 | 6.0 | 97356 | 7.0 | 97293 | 7.3 | NA | NA | NA | NA |
| 1.25" | NORYL | NA | NA | 97655 | 7.0 | NA | NA | 97360 | 7.0 | 97662 | 7.3 | NA | NA | 97710 | 7.0 |
| | SS 316L # # | NA | NA | 96487 | 7.0 | NA | NA | 97362 | 7.0 | 97311 | 7.3 | NA | NA | NA | NA |
| | #ZERON 100 | NA | NA | 97359 | 7.0 | NA | NA | 97363 | 7.0 | 97365 | 7.3 | NA | NA | NA | NA |
| 1.5" | NORYL | NA | NA | 97663 | 6.6 | NA | NA | 97369 | 6.6 | 97656 | 7.2 | NA | NA | 97326 | 6.5 |
| | SS 316L # # | NA | NA | 97368 | 6.6 | NA | NA | 97371 | 6.6 | 97449 | 7.2 | NA | NA | NA | NA |
| | #ZERON 100 | NA | NA | 97292 | 6.6 | NA | NA | 97372 | 6.6 | 97374 | 7.2 | NA | NA | NA | NA |

GENERAL NOTES:
 DIMENSIONS IN INCHES (MM APPROX.).
 * GRADE SA-351 CF3M.
 ** GRADE SA-995 CD3MN (UNS J92205).
 *** GRADE SA-995 CD3MWCuN (UNS J93380).
 # GRADE SA-479 UNS S32760/S32750
 ## GRADE SA-479 316L
 ### GRADE SA-182 F316L
 + OPTIONAL STRAP ASSEMBLY WITH SS-316 & 316L SHALL BE SUPPLIED AS PER METRIC STANDARDS.
 ++ ASME PARTS.

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