

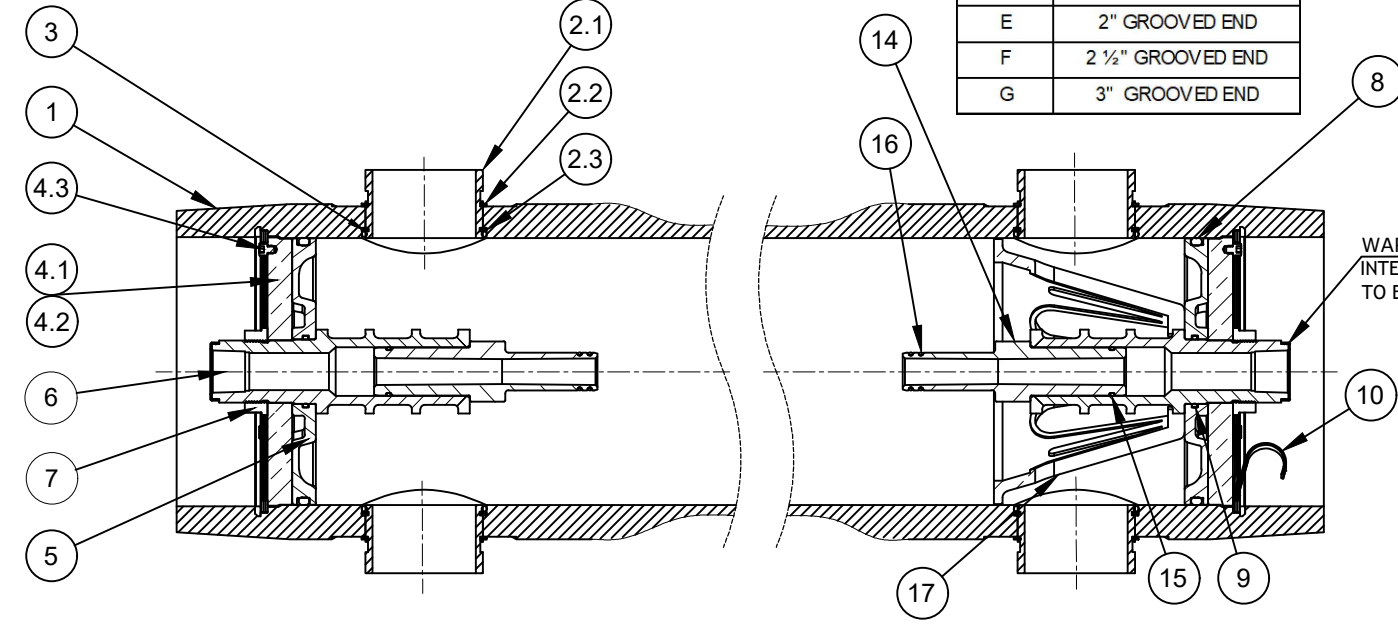
450  
PSI

FEED/CONCENTRATE 3" IPS PIPE GROOVED END MULTIPOINT CONFIGURATIONS IN 1 1/2", 2", 2 1/2" & 3" ARE AVAILABLE PLEASE SEE ORDER SECTION

CAUTION: INCORRECT MANIFOLDING WILL CAUSE SEVERE LOCAL STRESS AROUND PORT AND MAY RESULT IN LEAKS AND PREMATURE FAILURE; TAKE EVERY PRECAUTION LISTED ON REVERSE, SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

DWG REF	QTY	PART NUMBER	DESCRIPTION	MATERIAL
<b>SHELL</b>				
1*	1	200144	SHELL	Filament Wound Epoxy/Glass composite - Head locking grooves integrally wound in place.
2.1*	A/R	196655	3" F/C Port	SA-351 CF3M
2.2	A/R	196595	3" FCP retainer Ring 2 tum	Stainless Steel 316
2.3	A/R	196594	3" FCP retainer Ring 3 tum	Stainless Steel 316
3	A/R	196648	3" F/C Port Seal	Ethylene Propylene
<b>HEAD</b>				
4	2	196662	Bearing Plate Assembly	-
4.1*	1	196464	Bearing Plate	SB-221 A96061-T6
4.2	1	196663	Danger Label	-
4.3	3	196689	Socket Head Cap Screw	M6X10MM LONG, 316 Stainless Steel
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
<b>HEAD INTERLOCK</b>				
10*	2	47336	Spiral Ring	SA-479 SS 316
<b>VESSEL SUPPORT</b>				
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.
<b>ELEMENT INTERFACE</b>				
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.

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



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

WARNING  
INTERNAL PORT PRESSURE NOT TO EXCEED 125 PSI

NO. OF PORTS	PORT LOCATION	VESSEL QTY.		
Dash Length	L IN(MM)	P IN(MM)	S IN(MM)	Approx Weight LB(KG)**
-1	59.63 (1515)	47 (1194)	8X1 (203)	126 (57)
-2	99.63 (2531)	87 (2210)	48X1 (1219)	145 (66)
-3	139.63 (3547)	127 (3226)	80X1 (2032)	163 (74)
-4	179.63 (4563)	167 (4242)	64X2 (1626)	180 (82)
-5	219.63 (5579)	207 (5258)	78X2 (1981)	198 (90)
-6	259.63 (6595)	247 (6274)	92X2 (2337)	216 (98)
-7	299.63 (7611)	287 (7290)	106X2 (2692)	234 (106)
-8	339.63 (8627)	327 (8306)	120X2 (3048)	252 (114)

**GENERAL NOTES:**

- MAX. ANGULAR VARIATION BETWEEN ANY PORT ±0.5°.
- DIMENSION IN INCHES (MM APPROX.).
- SHELL EXTERIOR COATED WITH WHITE RAL 9003, HIGH GLOSS POLYURETHANE PAINT.
- ITEM 18 DOWNSTREAM ONLY.
- NOT TO BE USED FOR CONSTRUCTION UNLESS CERTIFIED BY PENTAIR.
- \* ASME PARTS.
- \*\* WEIGHTS GIVEN IN THE TABLE ARE FOR HIGHEST CONFIGURATION AND WILL VARY WITH CHANGE IN CONFIGURATION.

THIS DOCUMENT AND THE INFORMATION CONTAINED HEREIN, ARE THE CONFIDENTIAL AND PROPRIETARY INFORMATION OF PENTAIR WATER INDIA PVT. LTD. PENTAIR WATER INDIA PVT. LTD. IS THE SOLE OWNER OF THE INFORMATION AND PROCESSES DEFINED HEREIN. THIS DOCUMENT, AND THE INFORMATION CONTAINED, MAY NOT BE DISCLOSED, REPRODUCED, DUPLICATED, USED, SOLD, PUBLISHED, COMMUNICATED OR OTHERWISE DISTRIBUTED, IN WHOLE OR IN PART, FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN CONSENT OF PENTAIR WATER INDIA PVT. LTD. THIS DOCUMENT AND ANY COPIES, IN ALL APPLICABLE FORMATS, SHALL BE RETURNED TO PENTAIR WATER INDIA PVT. LTD. UPON REQUEST.

ALL INDICATED PENTAIR TRADEMARKS AND LOGOS ARE PROPERTY OF PENTAIR. THIRD PARTY REGISTERED AND UNREGISTERED TRADEMARKS AND LOGOS ARE PROPERTY OF THEIR RESPECTIVE OWNERS. BECAUSE WE ARE CONTINUOUSLY IMPROVING OUR PRODUCTS AND SERVICES, PENTAIR RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT PRIOR NOTICE. PENTAIR IS AN EQUAL OPPORTUNITY EMPLOYER.

©2024 Pentair. All Rights Reserved.

**PENTAIR CODELINE** VERNA, GOA INDIA

DRAWN BY: AS DATE: 16APR24	DRAWING DESCRIPTION: MODEL - 80K45 MEMBRANE HOUSING	DRAWING NO.: 200242	REV.: B
CHECKED BY: KPS DATE: 16APR24	CUSTOMER NAME:	VESSEL MODEL: 80K45	
APPROVED BY: FF DATE: 16APR24	PROJECT NAME:	TOTAL QTY: -	
ECN NO.: 6947	CUSTOMER P.O.#:	SIZE: A3	SCALE: NONE
REV. DATE: 11NOV24	-	PAGE NO.: 01 OF 02	

**RATING:**

DESIGN PRESSURE / MAWP .....	450 PSIG (3.10 MPa)
MAX. ALLOWABLE TEMP.....	190°F (88°C)
MIN. ALLOWABLE TEMP.....	20°F (-7°C)
FACTORY TEST PRESSURE.....	495 PSIG (3.41 MPa)
QUALIFICATION PRESSURE .....	2700 PSI (18.62 MPa)

**INTENDED USE:**

The CodeLine 80K45 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 450 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 80K45 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 Edition 2023. F/C port, Bearing plate and Quick release spiral ring are designed as per ASME Section VIII Division I Edition 2023.

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

The CodeLine 80K45 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 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;
  - \*\*\*ΔDIA = 0.015 in. (0.4mm) and
  - \*\*\*ΔL = 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 43.5 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 308043.

**ORDERING:**

Using the chart below, please check the features you require

**VESSEL LENGTH CODE – please check one**

MODEL 80K45  -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.
  - In compliance with the ASME Section X but not Code Stamped.
  - ASME Stamped and National Board Registered.
  - CE Marked – MODULE-D1, CATEGORY-2.

**PERMEATE PORT SELECTION**

Serial Number End

- Size of the Permeate Port  1"
- Type of Connection  FNPT
- Material of Construction  Noryl

Non-Serial Number End

- Size of the Permeate Port  1"
- Type of Connection  FNPT
- Material of Construction  Noryl

**Note:**

- Standard offering is 1.0" FNPT in Noryl.

**STRAP ASSEMBLY**

SS304

**FEED/CONCENTRATE PORT SELECTION**

Material of Construction  CF3M

Configuration  1G5G  
Ports not available in 90° configurations.

Serial number end

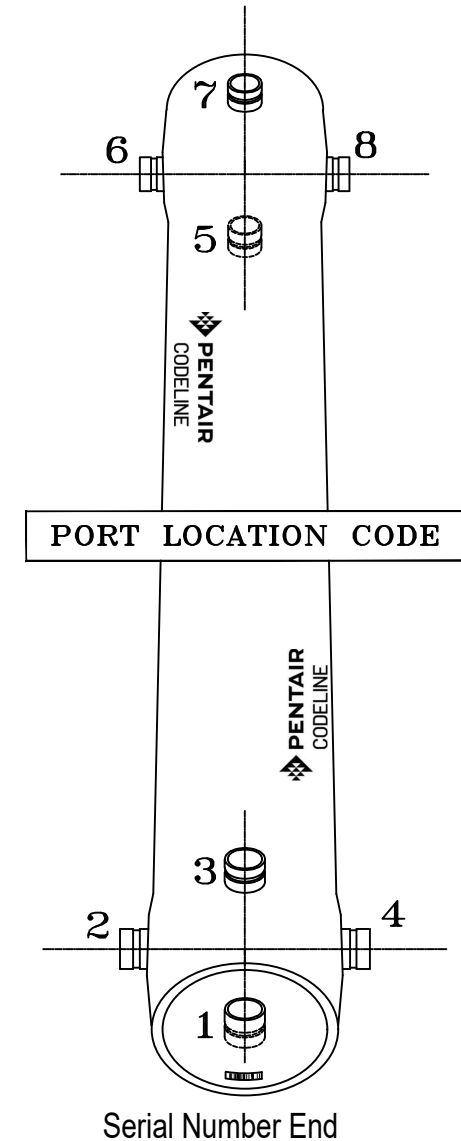
Opposite end

**BEARING PLATE MATERIAL**

A96061 T6 Aluminium

F/C PORT SIZE CODE						
SR. NO.	CODE	PORT SIZE	FCP PART NO.	FCP SEALS PART NO.	RR 2 TURN P/N	RR 3 TURN P/N
1	D	1 ½" GROOVED END	A/R	A/R	A/R	A/R
2	E	2" GROOVED END	A/R	A/R	A/R	A/R
3	F	2 ½" GROOVED END	A/R	A/R	A/R	A/R
4	G	3" GROOVED END	196655	196648	196595	196594

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

THIS DOCUMENT AND THE INFORMATION CONTAINED HEREIN, ARE THE CONFIDENTIAL AND PROPRIETARY INFORMATION OF PENTAIR WATER INDIA PVT. LTD. PENTAIR WATER INDIA PVT. LTD. IS THE SOLE OWNER OF THE INFORMATION AND PROCESSES DEFINED HEREIN. THIS DOCUMENT, AND THE INFORMATION CONTAINED, MAY NOT BE DISCLOSED, REPRODUCED, DUPLICATED, USED, SOLD, PUBLISHED, COMMUNICATED OR OTHERWISE DISTRIBUTED, IN WHOLE OR IN PART, FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN CONSENT OF PENTAIR WATER INDIA PVT. LTD. THIS DOCUMENT AND ANY COPIES, IN ALL APPLICABLE FORMATS, SHALL BE RETURNED TO PENTAIR WATER INDIA PVT. LTD. UPON REQUEST.

ALL INDICATED PENTAIR TRADEMARKS AND LOGOS ARE PROPERTY OF PENTAIR. THIRD PARTY REGISTERED AND UNREGISTERED TRADEMARKS AND LOGOS ARE PROPERTY OF THEIR RESPECTIVE OWNERS. BECAUSE WE ARE CONTINUOUSLY IMPROVING OUR PRODUCTS AND SERVICES, PENTAIR RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT PRIOR NOTICE. PENTAIR IS AN EQUAL OPPORTUNITY EMPLOYER.



VERNA, GOA  
INDIA

DRAWN BY:	AS	DRAWING DESCRIPTION:	DRAWING NO.:	REV.:
DATE:	16APR24	MODEL - 80K45 MEMBRANE HOUSING	200242	B
CHECKED BY:	KPS	CUSTOMER NAME:	VESSEL MODEL:	
DATE:	16APR24		80K45	
APPROVED BY:	FF	PROJECT NAME:	TOTAL QTY:	
DATE:	16APR24			
ECN NO. :	6947	CUSTOMER P.O.#:	SIZE:	SCALE:
REV. DATE:	11NOV24		A3	NONE
				PAGE NO.:
				02 OF 02