




Dash Length	L IN(MM)	P IN(MM)	S IN(MM)
-1	59.63 (1515)	46 (1168)	8X1 (203)
-2	99.63 (2531)	89 (2261)	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)



 <b>PENTAIR</b> <b>CODELINE</b>		<b>VERNA, GOA</b> <b>INDIA</b>	
<b>DRAWING DESCRIPTION:</b> MODEL - 80K45 MEMBRANE HOUSING		<b>DRAWING NO.:</b> 200242	<b>REV.:</b> D
<b>CUSTOMER NAME:</b> -		<b>VESSEL MODEL:</b> 80K45	
<b>PROJECT NAME:</b> -			<b>TOTAL QTY:</b> -
<b>CUSTOMER P.O.#:</b> -	<b>SIZE:</b> A3	<b>SCALE:</b> NONE	<b>PAGE NO.:</b> 01 OF 03

RATING:

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

**INTENDED USE:**  
The CodeLine 80K45 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 450 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 80K45 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 80K45 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.

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 43.2 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.

ORDERING:

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

VESSEL LENGTH CODE – please check one.

MODEL 80K30 ☐ -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 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

PERMEATE PORT SELECTION

Serial Number End

Size of the Permeate Port ☐ **1”** ☐ 1.25” ☐ 1.5”

Type of Connection ☐ **FNPT** ☐ MNPT ☐ BSPTM ☐ BSPTF ☐ IPST ☐ TRICLOVER ☐ BSPPF ☐ BSPPM

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 ☐ IPST ☐ TRICLOVER ☐ BSPPF ☐ BSPPM

Material of Construction ☐ **Noryl** ☐ SS316L ☐ Zeron 100

STRAP ASSEMBLY

☐ **SS304** ☐ SS316 ☐ SS316L

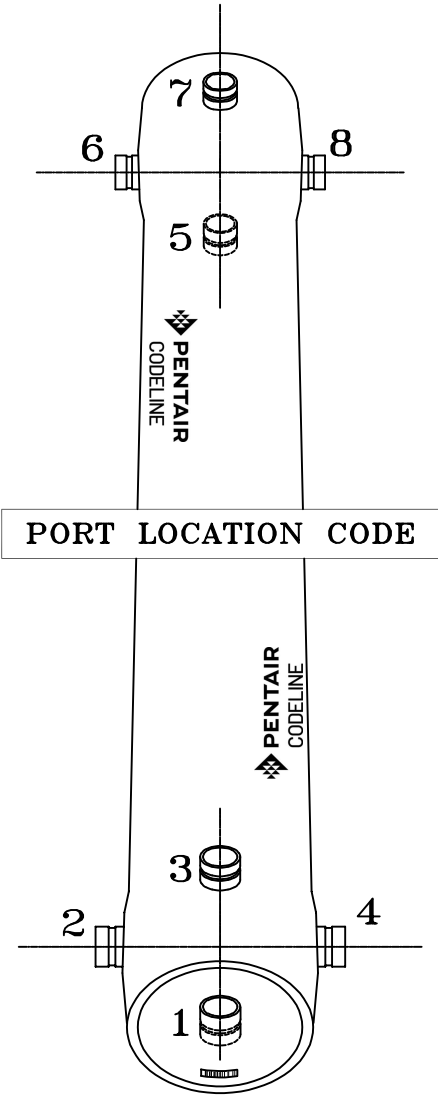
BEARING PLATE MATERIAL

☐ **A96061 T6 Aluminium**  
☐ Stainless Steel 316L

Note:

- ♦ **Standard offerings are highlighted in bold.**

Approx Weight LB(KG)	
Dash Length	Up to 3" FC Port
-1	126
	(57)
-2	145
	(66)
-3	163
	(74)
-4	180
	(82)
-5	198
	(90)
-6	216
	(98)
-7	234
	(106)
-8	252
	(114)




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

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

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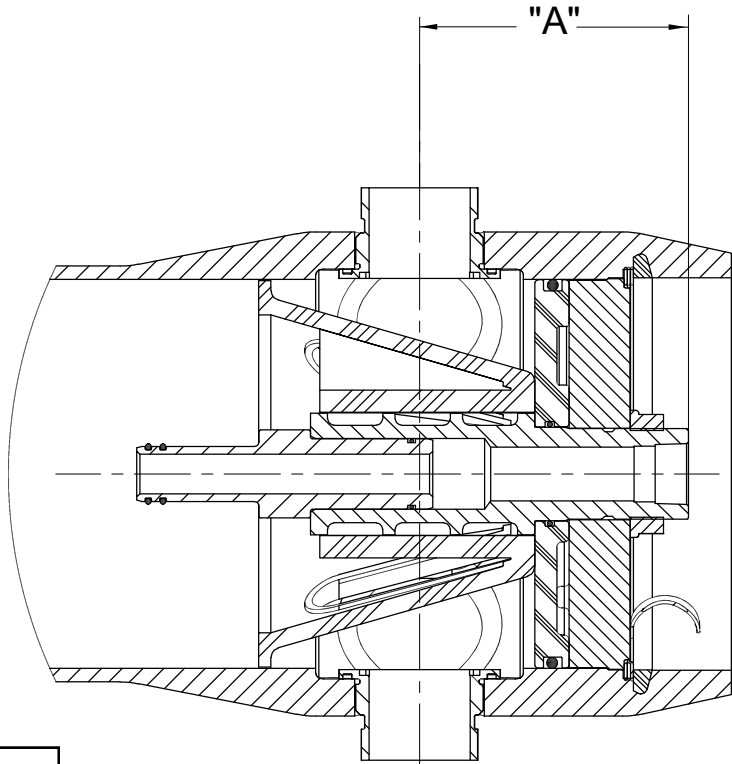
		 <b>PENTAIR CODELINE</b> <span>VERNA, GOA INDIA</span>			
DRAWN BY: DATE:	AS 16APR24	DRAWING DESCRIPTION: MODEL - 80K45 MEMBRANE HOUSING	DRAWING NO.: 200242	REV.: D	
CHECKED BY: DATE:	KPS 16APR24	CUSTOMER NAME: -	VESSEL MODEL: 80K45		
APPROVED BY: DATE:	FF 16APR24	PROJECT NAME: -			TOTAL QTY: -
PCO NO.:	547459	CUSTOMER P.O.#:	SIZE:	SCALE:	PAGE NO.:
REV. DATE:	16OCT25	-	A3	NONE	02 OF 03

80KG30 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"	<b>196818</b>	196709	196724	<b>196648</b>	<b>196595</b>

STRAP ASSEMBLY PART NUMBERS		
SS304	SS-316	SS-316L
<b>45042</b>	46926 <sup>+</sup>	94371 <sup>+</sup>

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

**BEARING PLATE PART NUMBERS		
PERMEATE PORT SIZE	ALUMINIUM	SS F316L###
1.0"/1.25"	<b>196662</b>	195292
1.5	195293	195294




PERMEATE PORT PART NUMBERS & PERMPORT TO F/C PORT OFFSET DISTANCE															
SIZE	MATERIAL	FNPT		MNPT		BSPTF		BSPTM		IPS GROOVED		BSPPF		BSPPM	
		PART NUMBER	DIM "A"	PART NUMBER	DIM "A"	PART NUMBER	DIM "A"	PART NUMBER	DIM "A"	PART NUMBER	DIM "A"	PART NUMBER	DIM "A"	PART NUMBER	DIM "A"
1.0"	NORYL	<b>96162</b>	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

SECTION THROUGH END CLOSURE

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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CODELINE

VERNA, GOA  
INDIA

DRAWN BY:	AS	DRAWING DESCRIPTION:	DRAWING NO.:	REV.:
DATE:	16APR24	MODEL - 80K45 MEMBRANE HOUSING	200242	D
CHECKED BY:	KPS	CUSTOMER NAME:	VESSEL MODEL:	
DATE:	16APR24	-	80K45	
APPROVED BY:	FF	PROJECT NAME:	TOTAL QTY:	
DATE:	16APR24	-	-	
PCO NO. :	547459	CUSTOMER P.O.#:	SIZE:	PAGE NO.:
REV. DATE:	16OCT25	-	A3	03 OF 03