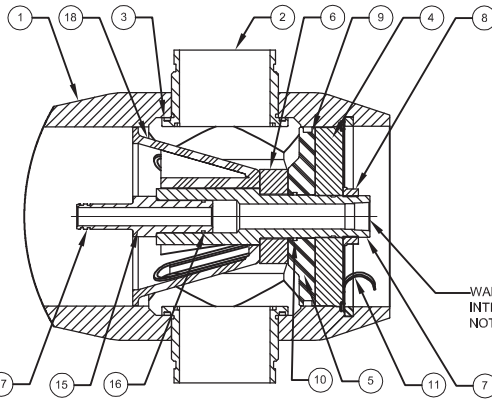


VIEW AT CENTER SUPPORT
 CENTER VESSEL ON 2 OR 3 SUPPORTS
 AT SPAN(S) *S*: 3 SUPPORTS REQUIRED
 FOR LENGTHS -4 AND ABOVE



NOTES:-

- ♦ MAX. ANGULAR VARIATION BETWEEN ANY PORTS ±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.
- ♦ FC PORT, BEARING PLATE, PERMEATE PORT & RETAINING RING MATERIALS ARE AS PER STAMPED APPLICABLE ASME EDITION.
- ♦ # 450 PSI FOR METALLIC PERMPORTS.
- ** FOR OPTIONAL PART NUMBERS. REFER PAGE 3.
- ** WEIGHTS GIVEN IN THE TABLE ARE FOR HIGHEST CONFIGURATION AND WILL VARY WITH CHANGE IN CONFIGURATION.

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
SHELL				
1	1	99284	SHELL	Filament Wound Epoxy/Glass composite - Head locking grooves integrally wound in place.
2	A/R		F/C Port	CF3M As per SA-351
3	A/R		F/C Port Seal	Ethylene Propylene
HEAD				
4	2	96157	Bearing Plate	6061-T6 As per SB-221
5	2	96159	Sealing Plate	Engineering Thermoplastic.
6	2	96262	Spacer	Engineering Thermoplastic.
7	2	96263	Permeate Port	Engineering Thermoplastic.
8	2	45066	Port Nut	Engineering Thermoplastic.
9	2	96000	Head Seal	Ethylene Propylene - O - Ring
10	2	45312	Pem Port Seal	Ethylene Propylene - O - Ring
HEAD INTERLOCK				
11	2	47336	Quick Release Spiral Ring	SS- 316 As per SA-479
VESSEL SUPPORT				
12	2*	52169	Saddle	Engineering Thermoplastic.
13	2*	45042	Strap Assy.	304 Stainless Steel-PVC Cushion.
14	4**	46265	Strap screw.	5/16-18 UNC, 2.5" L, 18-8 Stainless Steel.
ELEMENT INTERFACE				
15	2	A/R	Adapter	Engineering Thermoplastic.
16	2	52245	Adapter seal	Ethylene Propylene - O - Ring
17	4	A/R	PWT Seal	Ethylene Propylene - O - Ring
18	1	96163	Thrust Cone	Engineering Thermoplastic.

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

PO NUMBER		Dash Length	L IN(MM)	P IN(MM)	S IN(MM)	Approx Weight LB(KG)**
CUSTOMER NAME		-1	63.25 (1607)	48 (1219)	9X1 (229)	103 (47)
PROJECT NAME		-2	103.25 (2623)	88 (2235)	49X1 (1245)	125 (57)
TOTAL QUANTITY		-3	143.25 (3639)	128 (3251)	80X1 (2032)	147 (67)
PORT CONFIGURATION DETAILS		-4	183.25 (4655)	168 (4267)	64X2 (1626)	169 (77)
		-5	223.25 (5671)	208 (5283)	78X2 (1981)	190 (86)
PORT CONFIG	VESSEL QUANTITY	-6	263.25 (6687)	248 (6299)	92X2 (2337)	212 (96)
		-7	303.25 (7703)	288 (7315)	106X2 (2692)	234 (106)
		-8	343.25 (8719)	328 (8331)	120X2 (3048)	256 (116)
		PENTAIR				
		CODELINE®				
		MODEL - 80U45 MEMBRANE HOUSING				
DRAWN	KPS 16 OCT 10	DATE	26DEC17	DWG. NO.	99189	REV. M
CHECKED	RD 16 OCT 10	ECN	4624	SCALE	NONE	SHEET
APPROVED	RM 16 OCT 10	SIZE	A3	1 OF 3		

4

3

2

1

RATING:

DESIGN PRESSURE.....450 PSIG
(3.1MPa)
 MAX. OPERATING TEMP.....190°F
(88°C)
 MIN. OPERATING TEMP.....20°F
(-7°C)
 FACTORY TEST PRESSURE.....CE/ASME
 675 PSIG /495 PSIG
 (4.65 MPa)/(3.41 MPa)
 QUALIFICATION PRESSURE2700 PSI
 (18.62 MPa)

INTENDED USE:

The CodeLine 80U45 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 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 80U45 is designed in accordance with the engineering standards of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers (ASME) Section X. At small additional cost vessels can be inspected during construction by an ASME Authorized Inspector and ASME Code stamped.

The CodeLine 80U45 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. 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;
 ***ΔDIA = 0.015 in. (0.4mm) and
 ***ΔL = 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 80U Series USER’S GUIDE 94315

ORDERING:

Using the chart below, please check the features you require

VESSEL LENGTH CODE – please check one

MODEL 80U45 -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
 Material of Construction PET/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
 Material of Construction PET/Noryl SS316L Zeron 100

Note:

- Standard offering is 1.0” FNPT in Noryl.
- 1.25” & 1.5” BSPTF, 1.25” & 1.5” FNPT connections cannot be offered

STRAP ASSEMBLY

Standard SS304 Optional SS316 Optional SS316L

FEED/CONCENTRATE PORT SELECTION

Material of Construction CF3M Optional Duplex SS (CD3MN)
 Optional Super Duplex SS (CD3MWCuN)

Configuration

Standard - CF3M 1151
 Optional –Multi port: (Refer SPEC.SHEET/PM/4” for Multi ports selection).
 Ports not available in 90° configurations.

Serial number end
 Opposite end

BEARING PLATE MATERIAL

Standard – 6061 T6 Aluminium
 Optional – Stainless Steel 316L

Note: Refer page-3 for optional Part numbers.

ADAPTER KITS	
UP STREAM	DOWN STREAM

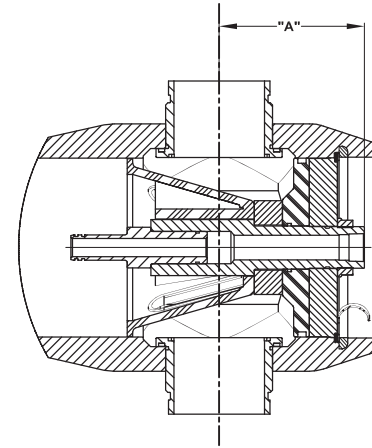
PORT SIZE CODE	
G	3” GROOVED END
I	4” GROOVED END

BEARING PLATE PART NUMBERS		
PERMEATE PORT SIZE	ALUMINIUM	SS316L ###
1.0"/1.25"	96157	96476
1.5"	96411	97373

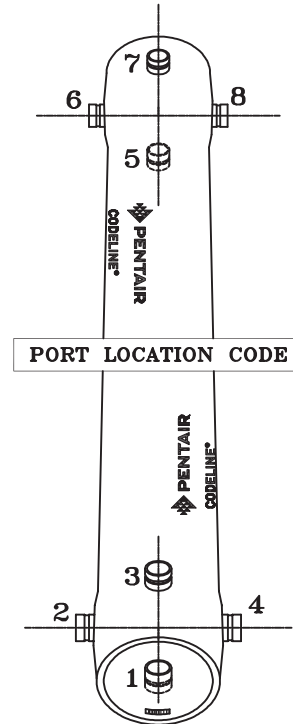
SEALING PLATE PART NUMBERS	
Standard used for Aluminium BP	96159
Optional used for SS316L BP	97404

PERM PORT RETAINER RING & PORT NUT PART NUMBERS		
1.0" / 1.25"	Standard Port nut	45066
1.5"	Port Retainer Ring	45247

STRAP ASSEMBLY PART NUMBERS		
SS304	SS316	SS316L
45042	46926+	94371+



SECTION THROUGH END CLOSURE



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

F/C PORT & SEAL PART NUMBER				
SIZE	*CF3M	**CD3MN	***CD3MWCuN	SEAL
4"	96266	96884	96647	96265
3"	96567	97443	96659	96119

PERMEATE PORT PART NUMBERS & PERMPORT TO F/C PORT OFFSET DISTANCE											
SIZE	MATERIAL	FNPT		MNPT		BSPTF		BSPTM		IPS GROOVED	
		PART NUMBER	DIM "A"	PART NUMBER	DIM "A"	PART NUMBER	DIM "A"	PART NUMBER	DIM "A"	PART NUMBER	DIM "A"
1.0"	PET/NORYL	96263	6.8	97411	7.8	97414	6.8	97417	7.8	97420	8.1
	SS316L # #	97410	6.8	97412	7.8	97415	6.8	97418	7.8	97421	8.1
	#ZERON 100	97296	6.8	97413	7.8	97416	6.8	97419	7.8	97422	8.1
1.25"	PET/NORYL	NA	NA	97467	7.8	NA	NA	97425	7.8	97428	8.1
	SS316L # #	NA	NA	97423	7.8	NA	NA	97426	7.8	97429	8.1
	#ZERON 100	NA	NA	97424	7.8	NA	NA	97427	7.8	97430	8.1
1.5"	PET/NORYL	NA	NA	97431	7.4	NA	NA	97434	7.4	97437	8.0
	SS316L # #	NA	NA	97432	7.4	NA	NA	97435	7.4	97438	8.0
	#ZERON 100	NA	NA	97433	7.4	NA	NA	97436	7.4	97439	8.0

- NOTES
- DIMENSION IN INCHES (MM APPROX.)
 - * GRADE CF3M AS PER SA-351
 - ** GRADE CD3MN AS PER SA-995 (UNS J92205)
 - *** GRADE CD3MWCuN AS PER SA-995 (UNS J 93380)
 - # GRADE ZERON 100 AS PER SA-479 (UNS S32760)
 - ## GRADE SS-316L AS PER SA-479
 - ### GRADE SS-F316L AS PER SA-182
 - + OPTIONAL STRAP ASSEMBLY WITH SS-316 & 316L SHALL BE SUPPLIED AS PER METRIC STANDARDS



DRAWN	KPS	MODEL - 80U45			
	16 OCT 10	MEMBRANE HOUSING			
CHECKED	RD	DATE	DWG. NO.	REV.	
	16 OCT 10	26DEC17	99189	M	
APPROVED	RM	ECN	SCALE	SIZE	SHEET
	16 OCT 10	4624	NONE	A3	3 OF 3