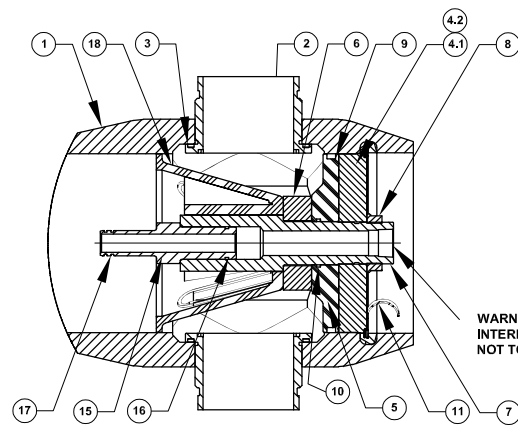


DWG REF	QTY	PART NUMBER	DESCRIPTION	MATERIAL
SHELL				
1	1	200049	SHELL	Filament Wound Epoxy/Glass composite - Head locking grooves integrally wound in place.
2	A/R	A/R	F/C Port	SA-995 (J93380) CD3MWCuN
3	A/R	A/R	F/C Port Seal	Ethylene Propylene
HEAD				
4	2	194476	Bearing Plate Assembly	-
4.1	1	96158	Bearing Plate	SB-221 A96061-T6
4.2	1	98803	Danger Label	-
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	Perm Port Seal	Ethylene Propylene - O - Ring
HEAD INTERLOCK				
11	2	47336	Quick Release Spiral Ring	SA-479 316
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.

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



SECTION THROUGH END CLOSURE

- 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.
 - ♦ 600 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 MANIPULATION WILL CAUSE SEVERE LOCAL STRESS AROUND PORT AND MAY RESULT IN LEAKS AND PREMATURE FAILURE; TAKE EVERY PRECAUTION LISTED ON PAGE 2, SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

PORT CONFIGURATION DETAILS	
PORT CONFIG	VESSEL QUANTITY

PO NUMBER _____
 CUSTOMER NAME _____
 PROJECT NAME _____
 TOTAL QUANTITY _____

DRAWN DATE	YPS 04MAY17
CHECKED DATE	KPS 04MAY17
APPROVED DATE	MKS 04MAY17

Dash Length	L IN(MM)	P IN(MM)	S IN(MM)	Approx Weight LB(KG)**
-1	66.65 (1693)	48 (1219)	10X1 (254)	264 (120)
-2	106.65 (2709)	88 (2235)	50X1 (1270)	301 (137)
-3	146.65 (3725)	128 (3251)	80X1 (2032)	338 (153)
-4	186.65 (4741)	168 (4267)	64X2 (1626)	374 (170)
-5	226.65 (5757)	208 (5283)	78X2 (1981)	411 (186)
-6	266.65 (6773)	248 (6299)	92X2 (2337)	448 (203)
-7	306.65 (7789)	288 (7315)	106X2 (2692)	485 (220)
-8	346.65 (8805)	328 (8331)	120X2 (3048)	522 (237)

PENTAIR
CODELINE®

MODEL - 80U120
 MEMBRANE HOUSING

ECN	5394	DWG. NO.	99188	REV.	G
DATE	22MAY20	SCALE	NONE	SIZE	B
				SHEET	1 OF 3

RATING:

DESIGN PRESSURE.....1200 PSIG
(8.27 MPa)
 MAX. OPERATING TEMP.....150°F
(66°C)
 MIN. OPERATING TEMP.....20°F
(-7°C)
 FACTORY TEST PRESSURE.....CE / ASME
 1800PSIG/1320 PSIG
 (12.41MPa)/ (9.10 MPa)
 QUALIFICATION PRESSURE7200 PSI
 (49.64 MPa)

INTENDED USE:

The CodeLine 80U120 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 1200 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 80U120 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 2019. F/C port, Bearing plate and Quick release spiral ring are designed as per Section VIII Division I Edition 2019.

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

The CodeLine 80U120 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. Glycerin 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 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 150°F (0.86 Mpa at 66°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 94182.

ORDERING:

Using the chart below, please check the features you require

VESSEL LENGTH CODE – please check one

MODEL 80U120 -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.

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 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

SS304 SS316 SS316L

FEED/CONCENTRATE PORT SELECTION

Material of Construction Super Duplex SS (CD3MWCuN)
 CE3MN* (Cannot be offered for ASME stamped vessels)

Configuration -1 1 5 1
 1 –Multi port: (Refer PAGE 3 for 3”-4” for Multi ports selection). Ports not available in 90° configurations.

Serial number end

Opposite end

BEARING PLATE MATERIAL

- A96061 T6 Aluminium
- Stainless Steel 316L

ADAPTER KITS	
UP STREAM	DOWN STREAM

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

Note: Refer page-3 for optional Part numbers.

4

3

2

1

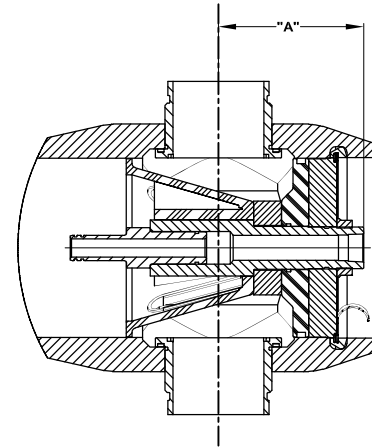
BEARING PLATE PART NUMBERS		
PERMEATE PORT SIZE	ALUMINIUM	SSF316L ###
1.0"/1.25"	194476	194538
1.5"	194507	194569

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

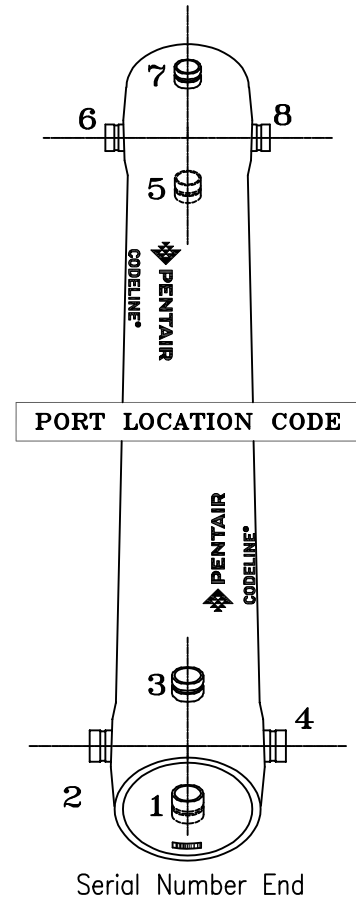
PERM PORT RETAINER RING & PORT NUT PART NUMBERS		
1.0" / 1.25"	Standard Port nut	45066
1.5"	Port Retainer Ring	45247

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

F/C PORT & SEAL PART NUMBER			
SIZE	***CD3MWCuN	**CE3MN	SEAL
4"	96648	98813	96265
3"	97860	97996	98621



SECTION THROUGH END CLOSURE



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

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 SA-995 (UNS J93404) CE3MN
 *** GRADE SA-995 (UNS J93380) CD3MWCuN
 # GRADE SA-479 UNS S32760 / S32750
 ## GRADE SA-479 SS-316L
 ### GRADE SA-182 SS-F316L
 + OPTIONAL STRAP ASSEMBLY WITH SS-316 & 316L SHALL BE SUPPLIED AS PER METRIC STANDARDS

DRAWN	YPS	MODEL - 80U120			
	04MAY17	MEMBRANE HOUSING			
CHECKED	KPS	DATE	DWG. NO.	REV.	
	04MAY17	22MAY20	99188	G	
APPROVED	MKS	ECN	SCALE	SIZE	SHEET
	04MAY17	5394	NONE	A3	3 OF 3

4

3

2

1