

DWG REF	QTY	PART NUMBER	DESCRIPTION	MATERIAL
SHELL				
1	1	99224	SHELL	Filament Wound Epoxy/Glass composite - Head locking grooves integrally wound in place.
2	A/R		F/C Port	CD3MWCuN as per SA-995 (J93380)
3	A/R		F/C Port Seal	Ethylene Propylene
HEAD				
4	2	96158	Bearing Plate	6061-T6 as per SB-221
5	2	96159	Sealing Plate	Engineering Thermoplastic.
6	2	96161	Permeate Port	Engineering Thermoplastic.
7	2	45066	Port Nut	Engineering Thermoplastic.
8	2	96000	Head Seal	Ethylene Propylene - O - Ring
9	2	45312	Perm Port Seal	Ethylene Propylene - O - Ring
HEAD INTERLOCK				
10	2	47336	Quick Release Spiral Ring	SS-316 as per SA-479
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, 18-8 Stainless Steel.
ELEMENT INTERFACE				
14	2	A/R	Adapter	Engineering Thermoplastic.
15	2	52245	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.

PO NUMBER	
CUSTOMER NAME	
PROJECT NAME	
TOTAL QUANTITY	
PORT CONFIGURATION DETAILS	
PORT CONFIG	VESSEL QUANTITY
DRAWN DATE	PGS 27 JAN 06
CHECKED DATE	MD 27 JAN 06
APPROVED DATE	RM 27 JAN 06

Dash Length	L IN(MM)	P IN(MM)	S IN(MM)	Approx Weight LB(KG)**
-1	64.15 (1629)	47 (1194)	10X1 (254)	145 (66)
-2	104.15 (2645)	87 (2210)	50X1 (1270)	179 (81)
-3	144.15 (3661)	127 (3226)	80X1 (2032)	213 (97)
-4	184.15 (4677)	167 (4242)	64X2 (1626)	248 (112)
-5	224.15 (5693)	207 (5258)	78X2 (1981)	282 (128)
-6	264.15 (6709)	247 (6274)	92X2 (2337)	316 (143)
-7	304.15 (7725)	287 (7290)	106X2 (2692)	347 (157)
-8	344.15 (8741)	327 (8306)	120X2 (3048)	381 (173)

PENTAIR
CODELINE®

MODEL - 80H100
 MEMBRANE HOUSING

ECN 4624	DWG. NO. 99169	REV. V
DATE 22DEC17	SCALE NONE	SIZE A3
		SHEET 1 OF 3

RATING:

DESIGN PRESSURE.....1000 PSIG
(6.90 MPa)
 MAX. OPERATING TEMP.....150°F
(66°C)
 MIN. OPERATING TEMP.....20°F
(-7°C)
 FACTORY TEST PRESSURE.....CE / ASME
 1500 PSI / 1100 PSIG
 (10.34 MPa / (7.58 MPa)
 QUALIFICATION PRESSURE6000 PSI
 (41.37 MPa)

INTENDED USE:

The CodeLine 80H100 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 1000 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 80H100 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. At small additional cost vessels can be inspected during construction by an ASME Authorized Inspector and ASME Code stamped.

The CodeLine 80H100 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 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 80H USER'S GUIDE 94182.
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ORDERING:

Using the chart below, please check the features you require

VESSEL LENGTH CODE – please check one

MODEL 80H100 -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.

ADAPTER KITS	
UP STREAM	DOWN STREAM

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 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 STD - Super Duplex SS (CD3MWCuN)
 Optional - CE3MN * (Cannot be offered for ASME stamped vessels)

Configuration

- Standard – CD3MWCuN 1G5G
- Optional –Multi port: (Refer SPEC.SHEET/PM/1.5"-3" 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.

PORT SIZE CODE	
D	1½" GROOVED END
E	2" GROOVED END
F	2½" GROOVED END
G	3" GROOVED END

4

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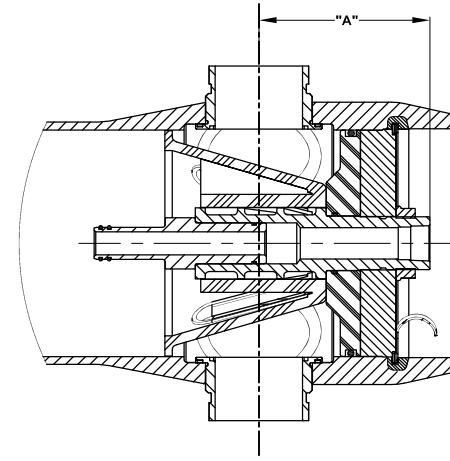
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BEARING PLATE PART NUMBERS		
PERMEATE PORT SIZE	ALUMINIUM	SS F316L ###
1.0"/1.25"	96158	96475
1.5"	96343	97370

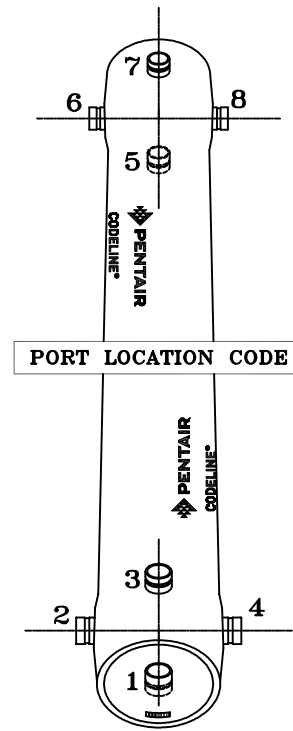
SEALING PLATE PART NUMBERS	
Standard used for Aluminium BP	96159
Optional used for SS316L BP	97404

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



Serial Number End

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	***CD3MWCuN	**CE3MN	SEAL
3"	97860	97996	98621
2.5"	97859	97999	96079
2.0"	97858	97998	96078
1.5"	97857	97997	96077

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"	NORYL	96161	6.0	97378	7.0	97664	6.0	97384	7.0	97689	7.2
	SS316L # #	97247	6.0	97379	7.0	97382	6.0	97385	7.0	97388	7.3
	#ZERON 100	97295	6.0	97380	7.0	97383	6.0	97386	7.0	97389	7.3
1.25"	NORYL	NA	NA	97665	7.0	NA	NA	97666	7.0	97667	7.2
	SS316L # #	NA	NA	97390	7.0	NA	NA	97392	7.0	97167	7.3
	#ZERON 100	NA	NA	97391	7.0	NA	NA	97393	7.0	97395	7.3
1.5"	NORYL	NA	NA	97668	6.6	NA	NA	97399	6.6	97669	7.2
	SS316L # #	NA	NA	97397	6.6	NA	NA	97400	6.6	97448	7.2
	#ZERON 100	NA	NA	97398	6.6	NA	NA	97401	6.6	97403	7.2

NOTES

DIMENSION IN INCHES (MM APPROX.)

** GRADE CE3MN AS PER SA-995 (UNS-J93404)

CE3MN cannot be offered for ASME Stamped vessels.

*** GRADE CD3MWCuN AS PER SA-995 (J 93380)

GRADE ZERON 100 AS PER SA-479

##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 - 80H100 MEMBRANE HOUSING							
CHECKED	RD	ECN	4624	DWG. NO.	99169	REV.	V		
APPROVED	RM	DATE	22DEC17	SCALE	NONE	SIZE	A3	SHEET	3 OF 3
			16 OCT 10						
			16 OCT 10						
			16 OCT 10						

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