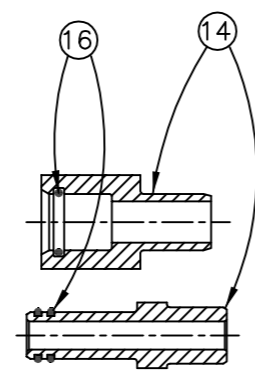


450  
PSI

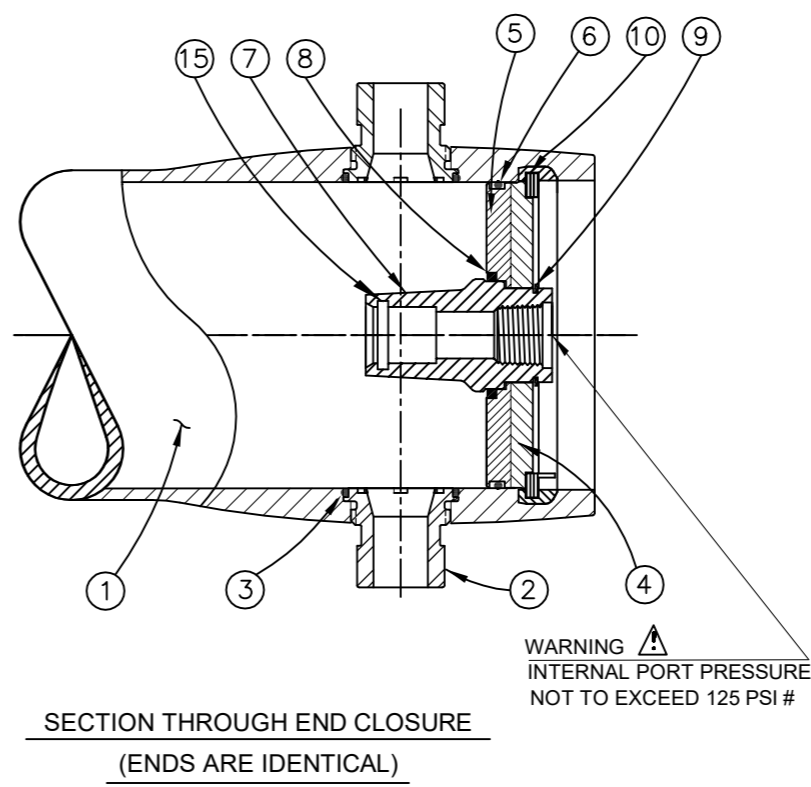
CAUTION: INCORRECT MANIFOLDING WILL CAUSE SEVERE LOCAL STRESS AROUND PORT AND MAY RESULT IN LEAKS AND PREMATURE FAILURE; TAKE EVERY PRECAUTION LISTED ON PAGE 02, SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

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

DWG REF	QTY	PART NUMBER	DESCRIPTION	MATERIAL
<b>SHELL</b>				
1*	1	200138	SHELL	Filament Wound Epoxy/Glass composites - Head locking grooves integrally wound in place.
2*	A/R	A/R	F/C Port	SA-351 CF3M
3	A/R	196596	F/C Port Seal	Ethylene Propylene - O - Ring
<b>HEAD</b>				
4*	2	PWG195043	Bearing Plate Assembly	-
4.1*	1	96803	Bearing Plate	SA-479 316L
4.2	1	96835	Danger Label	-
5	2	96855	Sealing Plate	Engineering Thermoplastic.
6	2	196266	Head Seal	Ethylene Propylene - O - Ring
7	2	96807	Permeate Port	Engineering Thermoplastic.
8	2	196274	Permeate Port Seal	Ethylene Propylene - Square Cut
9	2	45242	Port Retainer	PH-15-7Mo Stainless Steel
<b>HEAD INTERLOCK</b>				
10*	2	45260	Spiral Ring	SA-479 316
<b>VESSEL SUPPORT</b>				
11	2*	45058	Saddle	Engineering Thermoplastic.
12	2*	47459	Strap Assy.	304 Stainless Steel-PVC Cushion.
13	4**	97821	Strap Screw	5/16-18 UNC x 1.5" Long, 304 Stainless Steel
<b>ELEMENT INTERFACE</b>				
14	2	A/R	Adapter	Engineering Thermoplastic.
15	2	196271	Adapter seal	Ethylene Propylene - O - Ring
16	A/R	A/R	PWT seal	Ethylene Propylene - O - Ring



PORT SIZE CODE	
A	¾ NPT FEMALE
B	¾ BSPT FEMALE
C	1" GROOVED END



NO. OF PORTS	PORT LOCATION			VESSEL QTY.
-1	48.50 (1232)	42.00 (1067)	25X1 (635)	24 (11)
-2	88.50 (2248)	82.00 (2083)	56X1 (1422)	35 (16)
-3	128.50 (3264)	122.00 (3099)	80X1 (2032)	44 (20)
-4	168.50 (4280)	162.00 (4115)	64X2 (1626)	55 (25)
-5	208.50 (5296)	202.00 (5131)	78X2 (1981)	64 (29)
-6	248.50 (6312)	242.00 (6147)	92X2 (2337)	73 (33)

GENERAL NOTES:  
 1. MAX. ANGULAR VARIATION BETWEEN ANY PORT ±0.5°.  
 2. DIMENSIONS IN INCHES (MM APPROX)  
 3. SHELL EXTERIOR COATED WITH WHITE RAL 9003, HIGH GLOSS POLYURETHANE PAINT.  
 4. NOT TO BE USED FOR CONSTRUCTION UNLESS CERTIFIED  
 # 450 PSI FOR METALLIC PERMEATE PORT. FOR OPTIONAL PART NUMBERS, REFER PAGE 2  
 \* ASME PARTS.  
 \*\* WEIGHTS GIVEN IN THE TABLE ARE FOR HIGHEST CONFIGURATION AND WILL VARY WITH CHANGE IN CONFIGURATION.

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**PENTAIR CODELINE**  
VERNA, GOA INDIA

DRAWN BY: YPS	DRAWING DESCRIPTION: MODEL - 40S45 MEMBRANE HOUSING	DRAWING NO.: 200340	REV.: D
DATE: 25JAN24	CUSTOMER NAME:	VESSEL MODEL: 40S45	
CHECKED BY: KPS	PROJECT NAME:	TOTAL QTY: -	
DATE: 25JAN24	CUSTOMER P.O.#:	SIZE: A3	SCALE: NONE
APPROVED BY: FF	REV. DATE: 20NOV25	PAGE NO.: 01 OF 02	

**RATING:**

DESIGN PRESSURE/MAWP.....450 PSI  
(3.10 MPa)  
PVC/PET  
MAX. ALLOWABLE TEMP. ....120°F/190°F  
(49°C/88°C)  
MIN. ALLOWABLE TEMP.....20°F  
(-7°C)  
FACTORY TEST PRESSURE.....495 PSI  
(3.41 Mpa)  
BURST PRESSURE.....2700 PSI  
(18.62 MPa)

**INTENDED USE:**

The Model 40S45 Fiberglass RO/UF Pressure Vessel is designed for continuous, long term use as housing for reverse osmosis and ultrafiltration elements in typical industrial water treatment systems at pressures up to 450 psi. Any make of four-inch nominal diameter spiral-wound element is easily accommodated. The appropriate interfacing hardware for the element specified is furnished with the vessel.

The Model 40S45 is designed in accordance with the engineering standards of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers (ASME Code) Section X Edition 2025. F/C port, Bearing plate and Quick release spiral ring are designed as per Section VIII Division I Edition 2025.

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

The Model 40S45 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 reinforced plastic 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 closures, incorporating close-fitting, interlocking metal components, must be kept dry and free of corrosion; deterioration can lead to catastrophic mechanical failure of the heads.

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 = 0.01 in. (0.25mm) and ΔL = 0.140 in. (3.5mm) for a length code –6 vessel

DO NOT... hang piping manifolds from ports or use vessel in any way to support other components.

DO NOT... operate vessel at pressures and temperatures in excess of its rating

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... operate vessel with permeate pressure in excess of 125 psi at 120°F (0.86 MPa @ 49°C).

DO NOT...tighten Permeate Port connection more than one turn past hand tight

DO NOT... tolerate leaks or allow end closures to be routinely wetted in any way

DO NOT...pressurize vessel until double-checking to verify that the Locking Ring is in place and fully seated.

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 40S series USER'S GUIDE - 96897

**CAUTION:**  
EYE PROTECTION SHOULD BE WORN WHEN REMOVING OR INSTALLING RETAINING RING. KEEP FINGERS CLEAR FROM RETAINING RING WHILE INSTALLING LAST OF TWO TURNS. RING MAY SNAP INTO POSITION POSSIBLY PINCHING FINGERS

**ORDERING:**

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

**VESSEL LENGTH CODE – please select.**

MODEL 40S45  -1  -2  -3  -4  -5  -6

**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.

**EXTERIOR FINISH**

White high-gloss RAL 9003 polyurethane coating over sanded surface.

**FEED PORT CONFIGURATION**

- 1" IPS Grooved End
- Multi-Ports, Port clocking.

**PERMEATE PORT CONFIGURATION**

Serial number	Opposite	PERMEATE PORT MATERIAL
End <input type="checkbox"/>	End <input type="checkbox"/>	-PET
<input type="checkbox"/>	<input type="checkbox"/>	-PVC (120°F maximum)
<input type="checkbox"/>	<input type="checkbox"/>	-316L Stainless Steel
<input type="checkbox"/>	<input type="checkbox"/>	<b>PERMEATE PORT SIZE</b>
<input type="checkbox"/>	<input type="checkbox"/>	– ½" NPT Female (Standard per drawing)
<input type="checkbox"/>	<input type="checkbox"/>	– ½" BSPT/JISPT Female
<input type="checkbox"/>	<input type="checkbox"/>	– ½" BSPP/JISPP Female

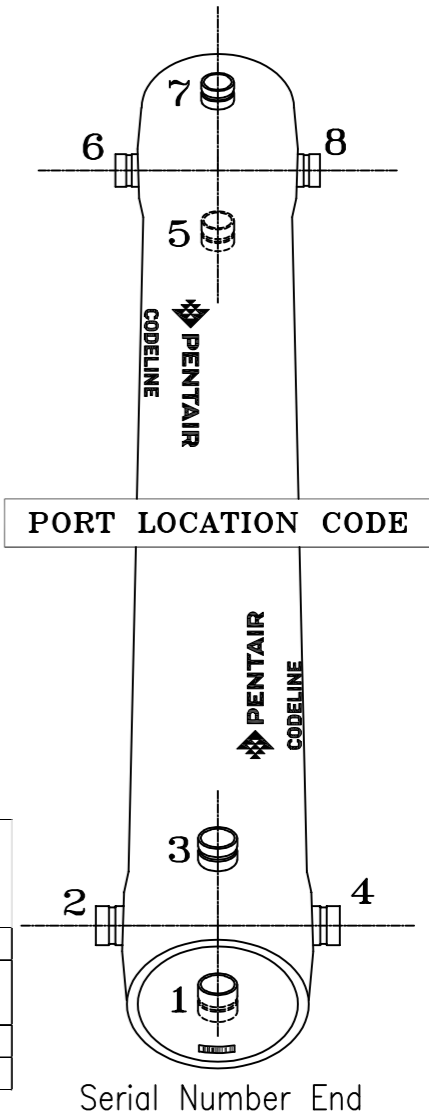
Please fill out your feed port configuration in the space below.

List port location first followed by port size for each choice.

Serial number end   
Opposite end

PORT SIZE CODE		P/N
A	¾" NPT FEMALE	196611
B	¾" BSPT FEMALE	196749
C	1" GROOVED END	196568

**NOTE**  
Spiral Retaining Ring Removal Tool (50303) is recommended opening and closing vessel.



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

PERMEATE PORT PART NUMBERS & PERMPORT TO VESSEL FACE OFFSET DISTANCE			
SIZE	MATERIAL	BSPPF	
		PART NUMBER	DIM "A"
1/2"	PET	96887	0.57
	PVC	NOT APPLICABLE	

1. PLEASE REFER TO 201421 FOR TRI-CLOVER DETAILS.

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