

## PRESSURE VESSELS CODELINE 8"-600 PSI PV 80S60 "CODED" SIDE PORT



## PV 80S60 CODELINE "CODED"

**MATERIALE DI COMPOSIZIONE:**

- Vessel: \_\_\_\_\_ Vetrotresina
- Tappi: \_\_\_\_\_ Lega di alluminio 6061-T6
- Anello di chiusura tappo: \_\_\_\_\_ 316 SST
- Basamento tappo: \_\_\_\_\_ materiale termoplastico
- Selle (incluse): \_\_\_\_\_ materiale termoplastico (nr. 2 per vessel fino al 3 elementi, dal 4 elementi fino al 6 elementi nr. 3 per vessel).
- Tiranti (inclusi): \_\_\_\_\_ in AISI 304 e cuscini in PVC (nr. 2 per vessel fino al 3 elementi, dal 4 elementi fino al 6 elementi nr. 3 per vessel).

**DATI TECNICI**

- Pressione di progetto: \_\_\_\_\_ 41 bar a 88°C (600 psi a 190°F)
- Temperatura minima di esercizio: \_\_\_\_\_ -7°C (20°F)
- Pressione di collaudo:
  - ASME 54 bar (780 psi)
  - CE 62 bar (900 psi)
- Pressione di scoppio: \_\_\_\_\_ 248 bar (3600 psi)
- Uscita permeato: \_\_\_\_\_ 1" NPT femmina
- Uscita concentrato: \_\_\_\_\_ 1 1/2" in AISI 316L connessione per giunto victaulic (giunto victaulic non incluso)
- Posizione porte laterali: \_\_\_\_\_ Standard a squadra
- Colore Standard: \_\_\_\_\_ Bianco
- Connettori per membrana (non inclusi): \_\_\_ Tramite adapter (2 x vessel, vedi documentazione tecnica)
- Nr. di elementi disponibili: \_\_\_\_\_ 1-2-3-4-5-6-7

**CERTIFICATI:**

- Ispezione e marcatura ASME CODE (quotazione su richiesta)
- Marcatura CE (quotazione su richiesta)
- Direttiva 97/23/CE (PED)
- NSF/ANSI 61
- ISO 9001:2000

**APPLICAZIONI:**

- Osmosi inversa;
- Ultrafiltrazione.

**ACCESSORI DA ORDINARE A PARTE:**

- Adapter: nr. 2 x vessel (vedi documentazione tecnica).
- Giunti Victaulic 1 1/2" VIC0001
- Sample Pro Valve (prelievo permeato): \_\_\_\_\_ CA0001

**TRATTAMENTO DELLE ACQUE:**

- Domestiche
- Industriali
- Municipali
- Reflue (contattare l' Ufficio tecnico Hytek)
- di mare
- Farmaceutiche
- Alimentari

## "CODED" CODELINE PV 80S60

**MATERIALS COMPOSITION:**

- Shell material: \_\_\_\_\_ Fiberglass
- Plugs: \_\_\_\_\_ 6061-T6 Hard anodized Alum. alloy
- Retaining ring \_\_\_\_\_ 316 SST
- Bearing ring \_\_\_\_\_ Engineering thermoplastic
- Saddles (included): \_\_\_\_\_ Engineering thermoplastic (nr. 2 supports required up to 3 elements, 3 supports required for length 4 and over)
- Straps (included): \_\_\_\_\_ AISI 304 and cushion in PVC (nr. 2 straps required up to 3 elements, 3 supports required for length 4 and over)

**TECHNICAL SHEET:**

- Design Pressure: \_\_\_\_\_ 41 bar a 88°C (600 psi at 190°F)
- Min. Operating temperature: \_\_\_\_\_ -7°C (20°F)
- Factory Test Pressure:
  - ASME 54 bar (780 psi)
  - CE 62 bar (900 psi)
- Burst Pressure: \_\_\_\_\_ 248 bar (3600 psi)
- Permeate Port: \_\_\_\_\_ 1" NPT female
- Concentrate Port: \_\_\_\_\_ 1 1/2" in AISI 316L connection for victaulic joint (victaulic joint not included)
- Side Port Position: \_\_\_\_\_ Standard square
- Standard color: \_\_\_\_\_ White
- Connection for membrane (not included): \_\_\_\_\_ By Adapter (2 x vessel, see technical documentation)
- Nr. elements available: \_\_\_\_\_ 1-2-3-4-5-6-7

**CERTIFICATIONS:**

- Inspection and ASME CODE stamped (quotation on request)
- CE mark stamped (quotation on request)
- 97/23/CE Directive (PED)
- NSF/ANSI 61
- ISO 9001:2000

**APPLICATIONS:**

- Reverse Osmose
- Ultrafiltration.

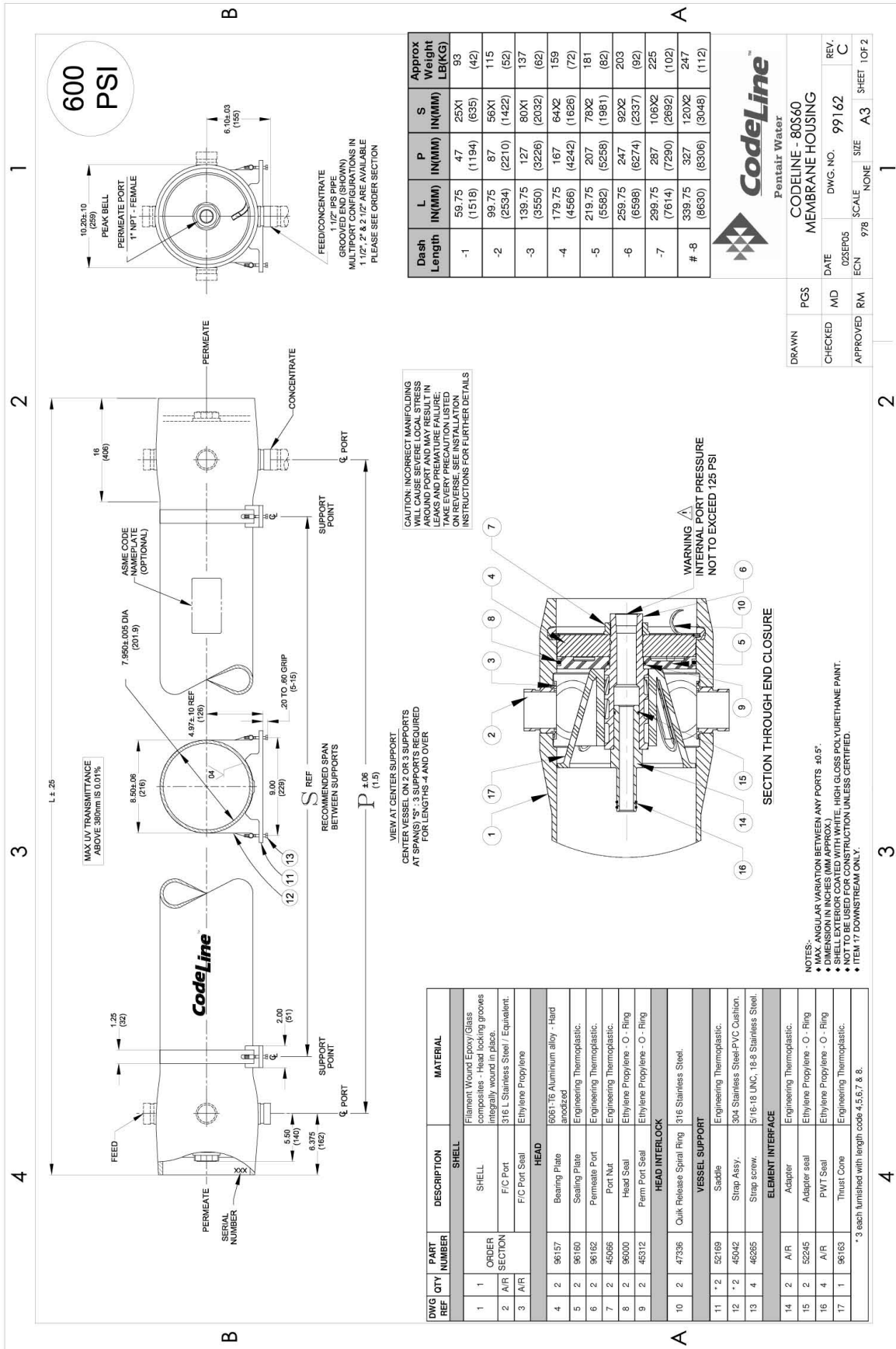
**ACCESSORIES TO BE ORDERED SEPARATELY:**

- Adapter: 2 x vessel, see technical documentation
- Victaulic Joints 1 1/2" VIC0001
- Sample Pro Valve (permeate stream): \_\_\_\_\_ CA0001

**WATER TREATMENTS**

- Domestic
- Industrial
- Municipal
- Drains (contact Hytek Technical Office)
- Sea
- Pharmaceuticals
- Alimentary

## DISEGNO TECNICO PV 80S60 CODELINE "CODED / "CODED" CODELINE PV80S60 TECHNICAL DRAW



Dash Length	L IN(MM)	P IN(MM)	S IN(MM)	Approx Weight LB(KG)
-1	59.75 (1518)	47 (1194)	25X1 (635)	93 (42)
-2	99.75 (2534)	87 (2210)	56X1 (1422)	115 (52)
-3	139.75 (3550)	127 (3226)	80X1 (2032)	137 (62)
-4	179.75 (4566)	167 (4242)	64X2 (1626)	159 (72)
-5	219.75 (5582)	207 (5293)	78X2 (1981)	181 (82)
-6	259.75 (6598)	247 (6274)	92X2 (2337)	203 (92)
-7	299.75 (7614)	287 (7290)	106X2 (2692)	225 (102)
-8	339.75 (8630)	327 (8306)	120X2 (3048)	247 (112)

**Codeline™**  
Pentair Water

CODELINE - 80S60  
MEMBRANE HOUSING

DRAWN	PGS	REV.
CHECKED	MD	DATE
APPROVED	RM	ECN
		DWG. NO. 99162
		SCALE NONE
		SIZE A3
		SHEET 1 OF 2

DWG REF	PART NUMBER	DESCRIPTION	SHELL	MATERIAL
1	1	ORDER SECTION	SHIELD	Filament Wound Epoxy/Glass composites - Head locking grooves integrally wound in place.
2	A/R	SECTION	F/C Port	316 L Stainless Steel / Equivalent.
3	A/R		F/C Port Seal	Ethylene Propylene
<b>HEAD</b>				
4	2	96157	Bearing Plate	6061-T6 Aluminum alloy - Hard anodized
5	2	96160	Sealing Plate	Engineering Thermoplastic.
6	2	96162	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
<b>HEAD INTERLOCK</b>				
10	2	47336	Quick Release Spiral Ring	316 Stainless Steel.
<b>VESSEL SUPPORT</b>				
11	* 2	52169	Saddles	Engineering Thermoplastic.
12	* 2	45042	Strip Assy.	304 Stainless Steel-PVC Cushion.
13	4	46265	Strip screw.	5/16-18 UNC, 18-8 Stainless Steel.
<b>ELEMENT INTERFACE</b>				
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.

## DISEGNO TECNICO PV 80S60 CODELINE "CODED / "CODED" CODELINE PV80S60 TECHNICAL DRAW

### RATING:

DESIGN PRESSURE.....600 PSIG at 190°F  
(4.1 MPa at 88°C)  
MIN. OPERATING TEMP.....20°F (-7°C)  
FACTORY TEST PRESSURE.....CE / ASME  
900 PSIG / 660 PSIG  
(6.20 MPa) (4.55 MPa)  
QUALIFICATION PRESSURE.....3600 PSI  
(24.8 MPa)

### INTENDED USE:

The Codeline 80S60 Fiberglass RO Pressure Vessel is designed for continuous, long term use as a housing for reverse osmosis membrane elements to desalt typical brackish waters at pressures up to 600 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 80S60 is designed in accordance with the engineering standards of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers (ASME) Code. At small additional cost vessels can be inspected during construction by an ASME Authorized Inspector and ASME Code stamped.

The Codeline 80S60 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 Water 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  $\geq 8'$  using compliant vessel supports furnished; 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 grooved-end pipe couplings, Victaulic® Style 77 or equal, 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 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;

\*\*\*ADIA = 0.015 in. (0.4mm) and  
\*\*\*AL = 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 3-10.

### ORDERING:

Using the chart below, please check the features you require and fax them with your purchase order to our customer service department for further processing.

For optional materials and features not listed below, please consult the factory for pricing and availability

### VESSEL LENGTH CODE – please check one

MODEL OCTA 80S60  -1  -2  -3  -4  -5  -6  -7  -8  
# Consult Sales Manager for Eight Element Housings.

### MEMBRANE BRAND AND MODEL – please check one and fill in information

Please supply adapters for the following membrane brand and specific model  
Brand \_\_\_\_\_ Model \_\_\_\_\_

Membrane brand and model information is not currently available, but will be supplied to Pentair Water on or before the following date: \_\_\_/\_\_\_/\_\_\_

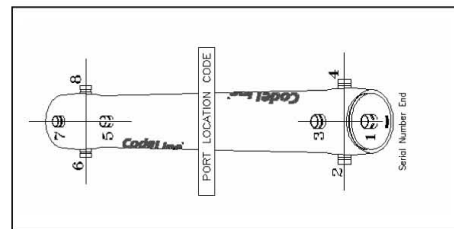
### CERTIFICATION REQUIRED

- ASME Stamped and National Board Registered (please consult factory for pricing)
- CE Marked
- Standard, Certified by Pentair water.

### MATERIAL AND PORT CONFIGURATIONS OPTIONS – please check one

Standard: all materials and port configurations as per drawing 99162 on the previous page  
 NOTE: The options listed below will increase the vessel price. Call factory for pricing details.  
 Option: Customer specified port configuration. Using the chart below, please indicate the customized options you require for each end of the pressure vessel (multiple options are available at each end).  
(Please consult factory as these options will affect pricing and vessel lead time)

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



### FEED PORT CONFIGURATION

- Standard – 1½" IPS pipe, grooved ends, with ports in-line
  - Optional – Multi-Ports™
- Using the instructions in Order Specification Sheet #99007 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

### PERMEATE PORT CONFIGURATION:

- Standard 1" FNPT.
- Optional – 1.25" MNPT.

For complete information on proper use of the vessel  
Please refer to the 80S Series USER'S GUIDE 94182.

## PRESSURE VESSELS CODELINE 8"-600 PSI PV 80S60NC "NO CODED" SIDE PORT



## PV 80S60NC CODELINE "NO CODED"

## MATERIALE DI COMPOSIZIONE:

- Vessel: \_\_\_\_\_ Vetrosesina
- Tappi: \_\_\_\_\_ materiale termoplastico
- Anello rapido di chiusura tappo: \_\_\_\_\_ 316 SST
- Selle (incluse): \_\_\_\_\_ materiale termoplastico (nr. 2 per vessel fino al 3 elementi, dal 4 elementi fino al 6 elementi nr. 3 per vessel).
- Tiranti (inclusi): \_\_\_\_\_ in AISI 304 e cuscini in PVC (nr. 2 per vessel fino al 3 elementi, dal 4 elementi fino al 6 elementi nr. 3 per vessel).

## DATI TECNICI

- Pressione di progetto: \_\_\_\_\_ 41 bar a 88°C (600 psi a 190°F)
- Temperatura minima di esercizio: \_\_\_\_\_ -7°C (20°F)
- Pressione di collaudo: \_\_\_\_\_ 62 bar (900 psi)
- Pressione di scoppio: \_\_\_\_\_ 248 bar (3600 psi)
- Uscita permeato: \_\_\_\_ 1" NPT femmina & 1 1/2" in PVC connessione per giunto victaulic (giunto victaulic non incluso)
- Uscita concentrato: \_\_\_\_\_ 1 1/2" in AISI 316L connessione per giunto victaulic (giunto victaulic non incluso)
- Posizione porte laterali: \_\_\_\_\_ Standard a squadra
- Colore Standard: \_\_\_\_\_ Bianco
- Connettori per membrana (non inclusi): \_\_\_\_ Tramite adapter (2 x vessel, vedi documentazione tecnica)
- Nr. di elementi disponibili: \_\_\_\_\_ 1-2-3-4-5-6-7

## CERTIFICATI:

- Marcatura CE (su richiesta)
- Direttiva 97/23/CE (PED)
- NSF/ANSI 61
- ISO 9001:2000

## APPLICAZIONI:

- Osmosi inversa;
- Ultrafiltrazione.

## ACCESSORI DA ORDINARE A PARTE:

- Adapter: nr. 2 x vessel (vedi documentazione tecnica).
- Giunti Victaulic 1 1/2" VIC0001
- Sample Pro Valve (prelievo permeato): \_\_\_\_\_ CA0001

## TRATTAMENTO DELLE ACQUE:

- Domestiche
- Industriali
- Municipali
- Reflue (contattare l' Ufficio tecnico Hytek)
- di mare
- Farmaceutiche
- Alimentari

## "NO CODED" CODELINE PV 80S60NC

## MATERIALS COMPOSITION:

- Shell material: \_\_\_\_\_ Fiberglass
- Plugs: \_\_\_\_\_ Engineering thermoplastic
- Retaining ring \_\_\_\_\_ 316 SST
- Saddles (included): \_\_\_\_\_ Engineering thermoplastic (nr. 2 supports required up to 3 elements, 3 supports required for length 4 and over)
- Straps (included): \_\_\_\_\_ AISI 304 and cushion in PVC (nr. 2 straps required up to 3 elements, 3 supports required for length 4 and over)

## TECHNICAL SHEET:

- Design Pressure: \_\_\_\_\_ 41 bar a 88°C (600 psi at 190°F)
- Min. Operating temperature: \_\_\_\_\_ -7°C (20°F)
- Factory Test Pressure: \_\_\_\_\_ 62 bar (900 psi)
- Burst Pressure: \_\_\_\_\_ 248 bar (3600 psi)
- Permeate Port: \_\_\_\_ 1" NPT female & 1 1/2" in PVC connection for victaulic joint (victaulic joint not included)
- Concentrate Port: \_\_\_\_\_ 1 1/2" in AISI 316L connection for victaulic joint (victaulic joint not included)
- Side Port Position: \_\_\_\_\_ Standard square
- Standard color: \_\_\_\_\_ White
- Connection for membrane (not included): \_\_\_\_ By Adapter (2 x vessel, see technical documentation)
- Nr. elements available: \_\_\_\_\_ 1-2-3-4-5-6-7

## CERTIFICATIONS:

- CE mark stamped (quotation on request)
- 97/23/CE Directive (PED)
- NSF/ANSI 61
- ISO 9001:2000

## APPLICATIONS:

- Reverse Osmose
- Ultrafiltration.

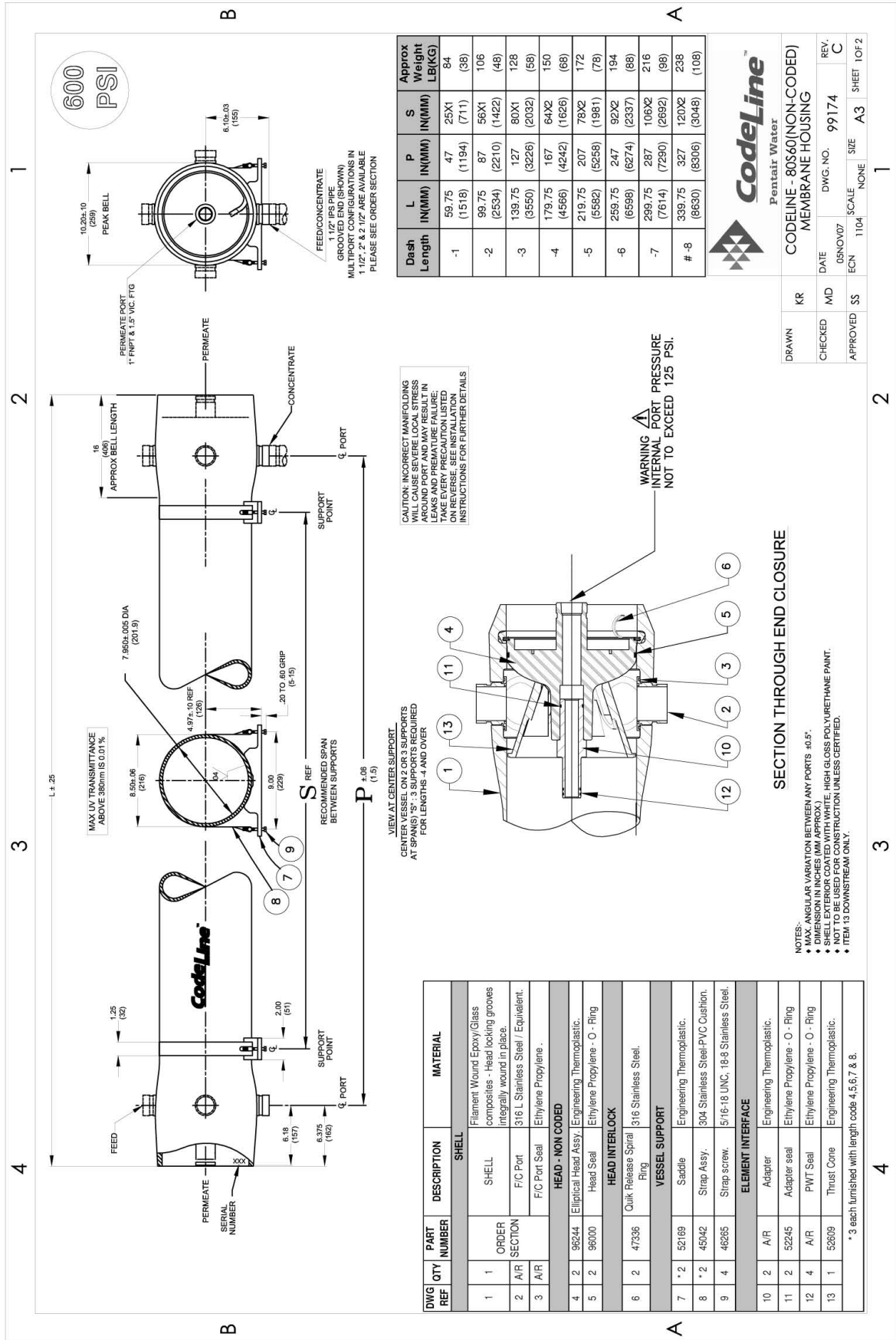
## ACCESSORIES TO BE ORDERED SEPARATELY:

- Adapter: 2 x vessel, see technical documentation
- Victaulic Joints 1 1/2" VIC0001
- Sample Pro Valve (permeate stream): \_\_\_\_\_ CA0001

## WATER TREATMENTS

- Domestic
- Industrial
- Municipal
- Drains (contact Hytek Technical Office)
- Sea
- Pharmaceuticals
- Alimentary

## DISEGNO TECNICO PV 80S60NC CODELINE "NO CODED / "NO CODED" CODELINE PV80S60NC TECHNICAL DRAW



DISEGNO TECNICO PV 80S60NC CODELINE "NO CODED" / "NO CODED" CODELINE PV80S60NC TECHNICAL DRAW

ORDERING: Using the chart below, please check the features you require and fax them with your purchase order to our customer service department for further processing.

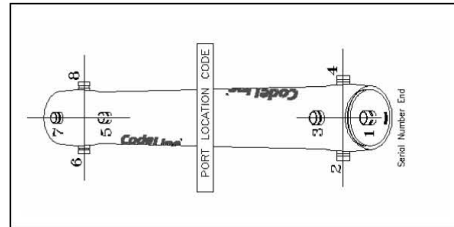
VESSEL LENGTH CODE - please check one
MODEL 80S60 Non Coded -1 -2 -3 -4 -5 -6 -7 -8
# Consult Sales Manager for Eight Element Housings.

MEMBRANE BRAND AND MODEL - please check one and fill in information
Brand \_\_\_\_\_ Model \_\_\_\_\_
Membrane brand and model information is not currently available, but will be supplied to Pentair Water on or before the following date. \_\_\_\_/\_\_\_\_/\_\_\_\_

CERTIFICATION REQUIRED
[ ] CE Marked
[ ] Standard, Certified by Pentair water.

MATERIAL AND PORT CONFIGURATIONS OPTIONS - please check one
Standard: all materials and port configurations as per drawing 99174on the previous page
NOTE: The options listed below will increase the vessel price. Call factory for pricing details.
Option: Customer specified port configuration. Using the chart below, please indicate the customized options you require for each end of the pressure vessel (multiple options are available at each end).

Table with 2 columns: PORT SIZE CODE, D 1 1/2" GROOVED END, E 2" GROOVED END, F 2 1/2" GROOVED END



FEED PORT CONFIGURATION
[ ] Standard - 1 1/2" IPS pipe, grooved ends, with ports in-line
[ ] Optional - Multi-Ports™
Using the instructions in Order Specification Sheet #99007 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 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

PERMEATE PORT CONFIGURATION:
[ ] Standard. 1" FNPT & 1.5" VICTUALIC.
[ ] Optional. 1" BSPF/JIS F-Parallel Thread & 1.5"VIC

For complete information on proper use of the vessel Please refer to the 80S Series USER'S GUIDE 94182.

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; 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 grooved-end pipe couplings, Victaulic® Style 77 or equal, 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 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;

\*\*\*DL = 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 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 3-10.

RATING:

DESIGN PRESSURE.....600 PSIG at 190°F (4.1 MPa at 88°C)
MIN. OPERATING TEMP.....20°F (-7°C)
FACTORY TEST PRESSURE.....900 PSIG (6.2 MPa)
QUALIFICATION PRESSURE.....3600 PSI (24.8 MPa)

INTENDED USE:
The CodeLine 80S60 Non Coded Fiberglass RO Pressure Vessel is designed for continuous, long term use as a housing for reverse osmosis membrane elements to desalt typical brackish waters at pressures up to 600 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 Shell of CodeLine 80S60 Non Coded is designed in accordance with the engineering standards of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers (ASME) Code.

The CodeLine 80S60 Non Coded 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 Water 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.