



**Contenitori
in vetroresina
per membrane**

***Fiberglass pressure
vessels for
membranes***

Edizione 2008 - rev. 0

CONTENITORI PER MEMBRANE IN VETRORESINA *Fiberglass pressure vessels for membranes*

CONTENITORI IN VETRORESINA PER MEMBRANE

INTRODUZIONE

A completamento del proprio range di membrane Toray offre una linea di contenitori (pressure vessels) per membrane di elevata qualità.

I prodotti offerti soddisfano tutte le possibili applicazioni delle nostre membrane.

L'accurata selezione tra contenitori e accessori (vedere anche capitolo giunti Victaulic) consente di eseguire avvisi e manutenzioni ottimali su tutti gli impianti a membrane.

PRODOTTI

- Contenitori per membrane 8"
 - attacchi frontali (front-port)
 - attacchi laterali (side-port)
 - attacchi multipli laterali (multi-port)
 - pressioni di esercizio: da 10 a 80 bar (da 150 a 1200 psi)
 - lunghezze: da 1 elemento a 7 elementi 40"
- Contenitori per membrane 4"
 - attacchi frontali (front-port)
 - attacchi laterali (side-port)
 - pressioni di esercizio: da 21 a 70 bar (da 300 a 1000 psi)
 - lunghezze: da 1 elemento a 6 elementi 40"

I BENEFICI UTILIZZANDO PV WAVE

- Produzione certificata in conformità con le norme ASME X
- Conformi e certificati con KTW (Certificazione in uso potabile di materiali plastici - Germania)
- Certificati NSF 61
- Facile installazione e manutenzione
- I contenitori possono essere sanitizzati a caldo a basse pressioni (80°C per 2 ore)
- Diversi tipi di connessioni disponibili per l'uscita del permeato

Fiberglass pressure vessels for membranes

Introduction

Complementing the range of superior membrane products, Toray has always been offering a line of high-quality membrane pressure housings (pressure vessels) and accessories.

The supplied range covers all relevant applications of our membrane products.

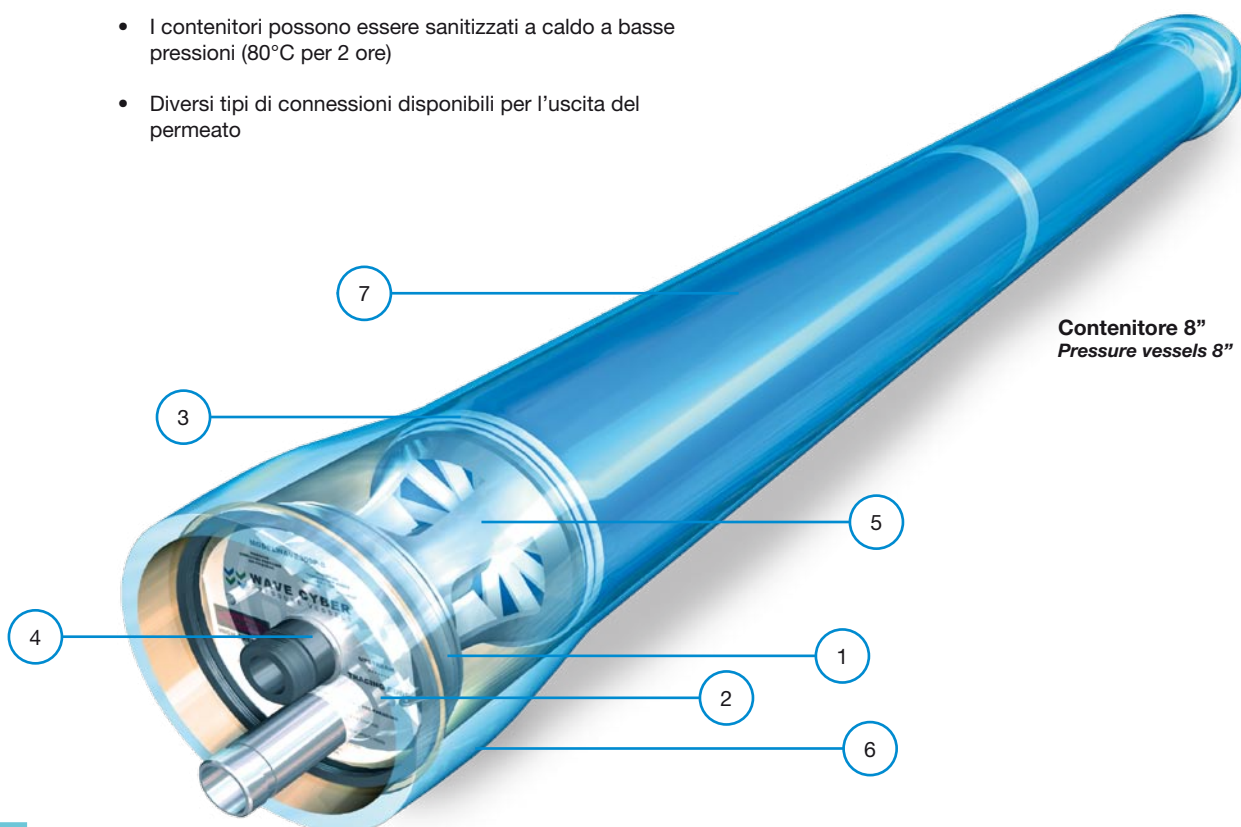
The carefully selected, matching vessels and components (look the Victaulic section couplings) make startup and operation of membrane systems easy, straightforward and reliable:

Products

- *8" membrane housings*
 - *front-ported*
 - *side-ported*
 - *multiported*
 - *working pressure: from 10 to 80 bar (from 150 to 1200 psi)*
 - *length: from 1 to 7 elements for standard membrane length 40".*
- *4" membrane housings*
 - *front-ported*
 - *side-ported*
 - *working pressure: from 21 to 70 bar (from 300 a 1000 psi)*
 - *length: from 1 to 6 elements for standard membrane length 40".*

Benefits from PV WAVE membrane housings

- *Production certified for compliance with ASME X.*
- *Compliance with KTW (German standard for plastics in potable water) certified.*
- *NSF 61 certificate available (starting Oct.2006).*
- *Easy installation and maintenance*
- *Pressure vessels can be hot sanitized in pressureless state at 80° C for two hours.*
- *Various connection styles for permeate ports available, adaptors for membrane elements from all manufacturers.*



Contenitore 8"
Pressure vessels 8"

CONTENITORI PER MEMBRANE IN VETRORESINA Fiberglass pressure vessels for membranes

COMPONENTI PRINCIPALI



L'anello di tenuta (retaining ring) è facile da rimuovere con il semplice utilizzo di una pinza.

Main components

Easy removal of the retaining ring, using only a small tool (eg. a pair of pliers, Philips head screw driver).



Tutti i contenitori sono forniti con un disco di chiusura in alluminio anodizzato 6061-T6 in accordo alla normativa ASME SB-221. Due fori filettati nella versione "side-port" aiutano nella rimozione del disco.

All pressure groups come with an aluminium bearing plate of high grade alloy 6061-T6 according to ASME SB-221. Two threaded holes in the bearing plate of the side port version allow for easy and reliable removal.



Il tappo di chiusura, che comprende anche l'attacco del permeato, è un pezzo unico ottenuto da un'unica stampata. Questa soluzione consente di ridurre il numero dei componenti interni e ottimizzare così la tenuta. Realizzato in PP caricato fibra di vetro, garantisce una elevata resistenza meccanica pur essendo particolarmente leggero. L'unica parte in PVC è l'adattatore delle membrane.

Unique sealing plate and permeate port construction from a single, injection molded part reducing component parts by 75% and saving an internal seal. Low weight and high long-term mechanical strength through glass filled PP composite material of sealing plate and thrust cone. The only PVC part is the membrane adaptor.



L'attacco standard del permeato è realizzata con un collare in PVC-U con un tronchetto in PVC-U d. 32 a incollaggio. Altri attacchi sono disponibili su richiesta.

Standard option for permeate connection is a PVC-U union, with glueing socket of 32 mm in diameter. Other options are available on request.



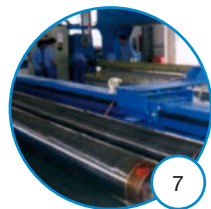
Il particolare cono di distribuzione, realizzato in PP caricato fibra di vetro, si adatta perfettamente alla superficie interna del contenitore, riduce le zone di ristagno dell'acqua e permette una migliore distribuzione del flusso. Il cono inserendosi sul bordo esterno del collettore del permeato non subisce alcuna rotazione durante la fase di esercizio e rimane saldamente ancorato al tappo di chiusura anche durante la fase di montaggio e apertura del pressure vessel contenitore.

Unique thrust cone construction, made in glass filled PP composite material, combines superior surface finish with best flow distribution and smallest deadwater zones. The thrust cone attaches to the permeate port to ensure the thrust cone does not rotate during operation and that it does not fall off the head when handling the head assembly and during installation.



Gli attacchi di alimento e concentrato, realizzati in AISI 316L o in DUPLEX per i contenitori da 70 bar (1000 psi) e 80 bar (1200 psi), sono sostituibili sia nei modelli "front-port" che nei modelli "side-port".

Proven installation technology and construction of side ports and the sideport seals made in AISI 316L or in DUPLEX for 70 bar (1000 psi) e 80 bar (1200 psi) pressure vessels. Replaceable side ports and end ports



L'elevata qualità della produzione si traduce in una perfetta regolarità della superficie interna del contenitore (Pressure Vessel).

Highest surface quality in production equipment results in the industry's smoothest surface finish inside a vessel.

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

INFORMAZIONI TECNICHE - Engineering information

PV WAVE 8"

CORPO - Shell

Materiale corpo - *Shell material* Fibra di vetro rinforzata resina poliestere - *Fiber-reinforced polyester resin*

MISURE - Sizes

Diametri disponibili - *Diameters available* 8"
Lunghezze disponibili per mod. 8" da 1 elemento a 7 con lunghezza 40" (8 elementi su richiesta)
Sizes available for 8" model from 1 element to 7 length 40" (8 element length 40" on request)

COLORE - Colors

Colore standard - *Standard color* Blue No. 0146, equivalent RAL 5012 (Standard)
Colori disponibili - *Available colors* Tutti - *Any*
Prezzo supplementare per colore Bianco: nessuno - Altri colori: nessuno per quantità > di 60 pezzi
Price supplement for colors White: no supplement - Other colors: no supplement for > 60 pcs

TAPPO - Head

MATERIALE - Materials:

Seiger di chiusura - *Retaining and locking rings* SS 316 L, SA-312
Tappo di chiusura - *Sealing plate* Polipropilene rinforzato fibra di vetro - *Glass-filled PP*
Disco di chiusura - *Bearing plate* Alluminio anodizzato 6061 T6 - *Hard-anodized aluminum 6061 T6*
Guarnizioni - *All gaskets & seals* EPDM
Adattatore tappo/membrana - *Adaptor head/membrane* PVC

MISURE - Sizes

Diametri disponibili - *Diameters available* 8"

ATTACCHI ALTA PRESSIONE - High pressure ports

MATERIALI - Materials

Acqua salmastra - *Brackish water* SS 316 L
Acqua mare - *Sea water* 254 SMO

TIPI DI ATTACCHI - Type of connections

Attacchi alta pressione - *High pressure ports* Front-port, side-port, multiport
Misure - *Sizes* Front-port: 1.5" victaulic - Side-port: 1.5", 2", 2.5", 3" victaulic
Multi-port: 1.5", 2", 2.5", 3" victaulic
Disponibilità attacchi aggiuntivi - *Additional ports available* Sì - *Yes*
Differenti attacchi sullo stesso contenitore
Different port sizes on same vessel Sì - *Yes*
Cllocking without price supplement Sì - *Yes*

ATTACCHI PERMEATO - Permeate ports

Materiale - *Material* Polipropilene rinforzato fibra di vetro (integrato con tappo di chiusura)
Fiber-reinforced PP (integrated with sealing plate)
Connessione - *Connection* Bocchettone in PVC a incollaggio d32mm. Altre opzioni su richiesta.
Opzione in acciaio su richiesta.
Union with glueing socket d32mm in PVC. Other options on request. SS option available.

TIPI DI ATTACCHI - Type of connections

Misure - *Sizes* Bocchettone in PVC a incollaggio d32mm - Filettatura 1" gas femmina
Union with glueing socket d32mm (Standard) - G1" female thread

SELLE E TIRANTI - Saddles and straps

Selle - *Saddles* Poliuretano - *Polyurethane*
Tiranti - *Straps* SS 304 L
Protezione tirante - *Strap protection jacket* PVC morbido - *Soft PVC*
Bullone tirante - *Strap nut* Bronzo Hpb51-9 - *Bronze Hpb51-9*

PRESSIONI - Pressures

Pressioni disponibili - *Pressure available* Da 21 bar (300 psi) a 80 bar (1200 psi) - *From 21 bar (300 psi) to 80 bar (1200 psi)*

CERTIFICATI - Certificates

Produzione - *Production* Certificata ASME in accordo a Sez. X del Cod. ASME per contenitori in pressione
Certified by ASME according to Section X of ASME Code for Pressure Vessels
Uso per acqua potabile - *Contact with potable water* KTV - Germany (German standard for plastics in potable water) - NSF 61 - USA

MATERIALE COMPRESO AD OGNI FORNITURA - Scope of supply

Corpo (come ordinato) - *Shell as ordered* n. 1 Color Blue No. 0146 (equivalent RAL 5012)
Tappi - *Heads* n. 2 ciascuno con i seguenti attacchi - *each with following connections*
Modello 8" "front-port" - *Model 8" "front-port"* n. 1 Feed /Conc. 1.5" victaulic - n. 1 Union with glueing socket d32mm
Modello 8" "side-port" - *Model 8" "side-port"* n. 1 Union with glueing socket d32mm
Modello 8" "multi-port" - *Model 8" "multi-port"* n. 1 Union with glueing socket d32mm
Adattatore tappo/membrana - *Adaptor head/membrane* n. 2 aperti - *open*
Selle - *Saddles* n. 2 per contenitori da 1 a 4 elementi - *for pressure vessels from 1 to 4 elements*
n. 3 per contenitori da 5 a 8 elementi - *for pressure vessels from 5 to 8 elements*
Tiranti - *Straps* n. 2 per contenitori da 1 a 8 elementi - *for pressure vessels from 1 to 8 elements*

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

INFORMAZIONI TECNICHE - Engineering information

PV WAVE 4"

CORPO - Shell

Materiale corpo - *Shell material* Fibra di vetro rinforzata resina poliestere - *Fiber-reinforced polyester resin*

Misure - Sizes

Diametri disponibili - *Diameters available* 4"

Lunghezze disp. per mod. 4"- *Sizes available for 4" model* da 1 elemento a 6 con lunghezza 40" - *from 1 element to 6 length 40"*

Colore - Colors

Colore standard - *Standard color* Blue No. 0146, equivalent RAL 5012 (Standard)

Colori disponibili - *Available colors* Tutti - *Any*

Prezzo supplementare per colore
Price supplement for colors Bianco: nessun supplemento
Altri colori: nessun supplemento per quantità > di 60 pezzi
White: no supplement - Other colors: no supplement for > 60 pcs

TAPPO - Head

Materiale - Materials:

Seiger di chiusura - *Baffle* SS 316L - 254 SMO (1000 psi)

Tappo di chiusura - *Sealing plate* PVC

Viti di chiusura - *Allen screws* M8*20 Grade 8.8

Guarnizioni - *All gaskets & seals* EPDM

Adattatore tappo/membrana (1000 PSI)
Adaptor head/membrane (1000 PSI) PVC

Misure - Sizes

Diametri disponibili - *Diameters available* 4"

ATTACCHI ALTA PRESSIONE - High pressure ports

Materiali - Materials

Acqua salmastra - *Brackish water* SS 316 L

Acqua mare - *Sea water* 254 SMO

Tipi di attacchi - Type of connections

Attacchi alta pressione - *High pressure ports* Front-port, side-port

Misure - *Sizes* Front-port: 3/4" BSP F - 3/4" BSP M (1000 psi)
Side-port: 3/4" victaulic

ATTACCHI PERMEATO - Permeate ports

Materiale - *Material* PVC (integrato con tappo di chiusura) - *PVC (integrated with sealing plate)*

Tipi di attacchi - Type of connections

Misure - *Sizes* Filettatura 1/2" BSP F - 1/2" BSP F thread
Filettatura 1/2" BSP M (1000 psi) - 1/2" BSP M thread (1000 psi)

SELLE E TIRANTI - Saddles and straps

Selle - *Saddles* Poliuretano - *Polyurethane*

Tiranti - *Straps* SS 304 L

Protezione tirante - *Strap protection jacket* PVC morbido - *Soft PVC*

Bullone tirante - *Strap nut* Bronzo Hpb51-9 - *Bronze Hpb51-9*

PRESSIONI - Pressures

Pressioni disponibili
Pressure available Da 21 bar (300 psi) a 70 bar (1000 psi)
From 21 bar (300 psi) to 70 bar (1000 psi)

CERTIFICATI - Certificates

Produzione - *Production* Certificata ASME in accordo a Sez. X del Cod. ASME per contenitori in pressione
Certified by ASME according to Section X of ASME Code for Pressure Vessels

Uso per acqua potabile - *Contact with potable water* KTV - Germany (*German standard for plastics in potable water*) - NSF 61 - USA

MATERIALE COMPRESO AD OGNI FORNITURA - Scope of supply

Corpo (come ordinato) - *Shell as ordered* n. 1 color Blue No. 0146 (equivalent RAL 5012)

Tappi - *Heads* n. 2 ciascuno con i seguenti attacchi - *each with following connections*
Modello 4" "front-port"- *Model 4" "front-port"* n. 1 Feed/concentrate 3/4" BSP F or 3/4" BSP M (1000 psi)
n. 1 Permeate 1/2" BSP F or 1/2" BSP M (1000 psi)

Modello 4" "side-port"- *Model 4" "side-port"* n. 1 Permeate 1/2" BSP F or 1/2" BSP M (1000 psi)

Adattatore tappo/membrana (1000 psi)
Adaptor head/membrane (1000 psi) n. 1 aperto - *open*

Selle - *Saddles* n. 2 per contenitori da 1 a 4 elementi - *for pressure vessels from 1 to 4 elements*
n. 3 per contenitori da 5 a 6 elementi - *for pressure vessels from 5 to 6 elements*

Tiranti - *Straps* n. 2 per contenitori da 1 a 6 elementi - *for pressure vessels from 1 to 6 elements*

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

Membrane Housing Specification Chart

WAVE - 300 - E - 8 - H - - BL

Standard model

Membrane Housing Paint Color Options

WH	White
BL	Blue

Length Code
See attachment 1 for options

Permeate port thread
See attachment 2 for options

F	Female Thread NPT 1"
M	Male Thread NPT 1 1/4"
G	Female Thread Rp 1"
H	Male Thread G 1 1/2" x 1 1/4"

Membrane Housing Diameter 8"

Feed/Concentrate Port Type: End Port 1"1/2 v/c.

Membrane Housing Max. Operating Pressure Options:

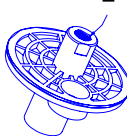
300	300PSI
400	400PSI
600	600PSI
1000	1000PSI
1200	1200PSI

Brand Name _____

Attachment 1: Membrane Housing Length options


Element Code	1	1.5	2	3	4	5	6	7	7.5	8
Code	1	1.5	2	3	4	5	6	7	7.5	8

Attachment 2: Permeate port thread type options:



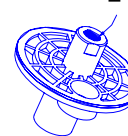
Female Thread

Female Thread NPT 1" Option F



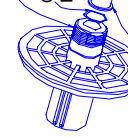
Male Thread

Male Thread NPT 1 1/4" Option M



Female Thread

Female Thread Rp 1" Option G

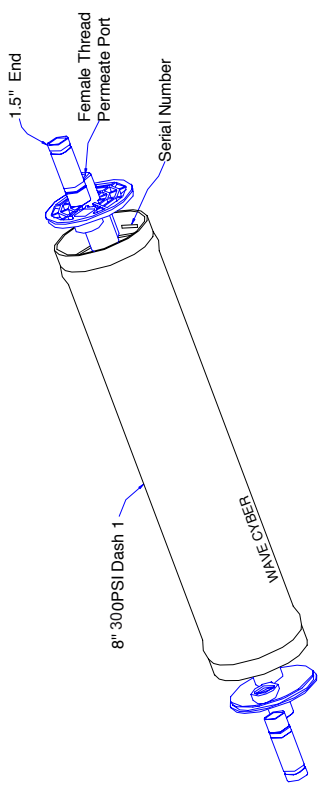


Male Thread
O Ring : EC30-08-27-EPDM
Union Nut EC30-08-29-PVC
Union Adaptor EC30-08-28-PVC

Male Thread G 1 1/2"X1 1/4" Code H
This thread fits a 1 1/4" union nut.
(Stainless Steel option is available.
Please contact customer service)

EXAMPLE

Please understand this example before filling out the ordering page. For questions concerning the use of this chart, please call the factory.



Model WAVE-300E-8-H-1-WH

Ordering: _____

1 Model: _____ Quantity: _____

Contact Person: _____ Contact: _____

PV WAVE-300E-8

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PERMEATE PORT
OPTION F: NPT 1" FEMALE THREAD
OPTION G: Rp 1" FEMALE THREAD
OPTION H: G 1 1/2" x 11 MALE THREAD

PERMEATE PORT
OPTION M: NPT 1 1/4" MALE THREAD

FEED/CONCENTRATE

1.5" GROOVED END

DETAIL 1:1

TECHNICAL REQUIREMENT

- TESTED ACCORDING TO ASME BOILER & PRESSURE VESSEL CODE SECTION X - FIBER REINFORCED PLASTIC PRESSURE VESSELS;
- MAX OPERATING PRESSURE - 300PSI(21kg/cm²)
- WATER MEDIUM TEMPERATURE - 1°C - 49°C
- NOT APPLICABLE TO CORROSIVE LIQUID;
- LEAKAGE TEST - HYDRO TEST TESTED AT 1.5 TIMES ITS OPERATING PRESSURE, I.E.: 450PSI 31.5kg/cm² SAMPLE RATE - 100%

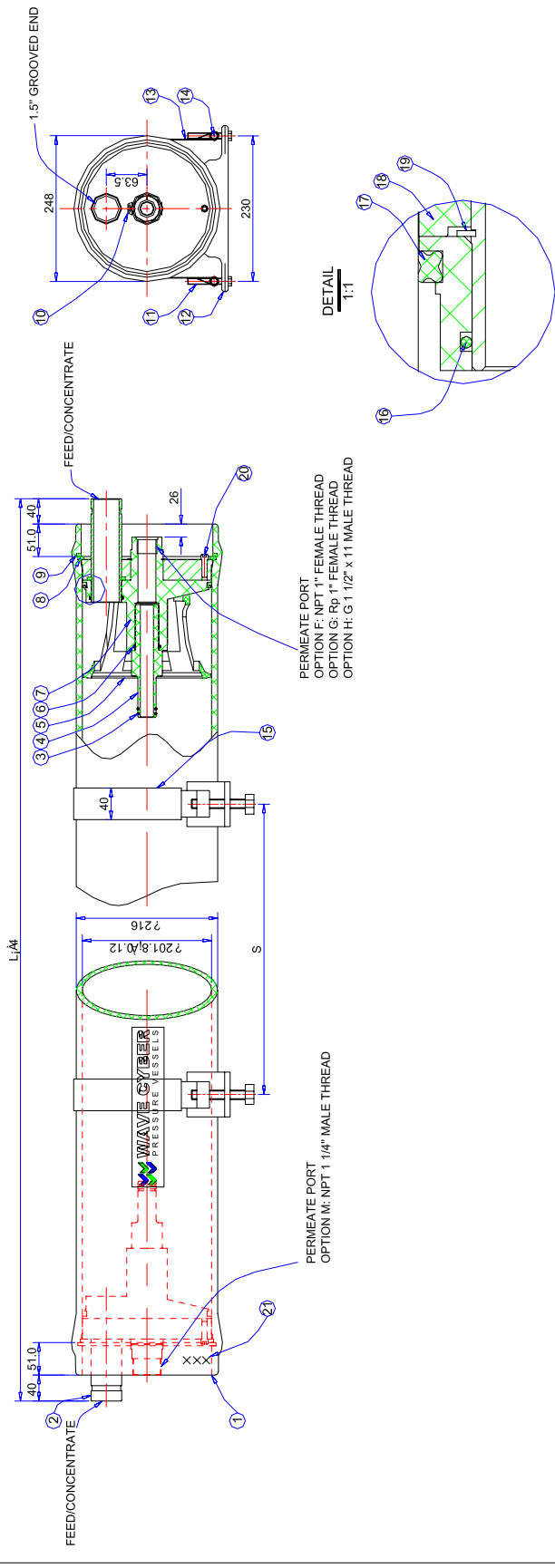
VERSION NO.	DESCRIPTION OF CHANGES	SIGNATURE	DATE
REFERRENTIAL PLASTIC SHRINKAGE (IF NECESSARY)	IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING DRAFT ANGLE 0.5° ROOT RADIUS 0.5 DIMENSIONAL TOLERANCE X ±1 X X0.1 X X0.05 ANGULAR DIFFERENCE ±0.1°		
DESIGN	SCALE	MATERIAL	MODEL
	1:8		WAVE CYBER (SHANGHA) CO., LTD.
INSPECTION	QUANTITY	SMOOTHNESS	DESCRIPTION
			300PSI MEMBRANE HOUSING (END PORT)
APPROVAL	COMPUTER CODE:	PROJECTION	VERSION NO.
			ED30-08-00
THIS PRODUCT DRAWING CAN NOT BE COPIED AND/OR USED WITHOUT PRIOR WRITTEN APPROVAL OF WAVE CYBER.			TOTAL PAGE: 1

ITEM	DESCRIPTION	DRAWING NO.	QTY	MATERIAL
25	BOTTOM LABEL	EC30-08-24	1	ART PAPER 15*32
24	TOP LABEL	EC30-08-23	1	ART PAPER 15*32
23	ALUMINUM PLATE LABEL	ED25-08-08	2	ADHESIVE LABEL
22	SEAL O-RING	EC30-08-21	4	ART PAPER 20*60
21	SEAL O-RING LABEL	11562-06-07	2	STAINLESS STEEL - GRADE 8.8 - M5*8
20	ALLEN SCREW	ED25-08-05	2	316L SA-312 STAINLESS STEEL D0=48
19	RETAINING RING	ED30-08-05	2	6061-T6 SB-221
18	BEARING PLATE	ED25-08-26	2	SI
17	HEAD SEAL	ED30-08-04	2	EPDM
16	FEED/CONCENTRATE O RING	ED25-08-19	2	SOFT PVC
15	STRAP PROTECTIVE JACKET	EC30-08-18	2	Hd05-1-9
14	STRAP NUT	EC30-08-17	2	304
13	STRAP	EC30-08-16	2	POLYURETHANE
12	SADDLE	11531	4	STAINLESS STEEL - GRADE 8.8 - M8*70
11	PERMEATE RETAINING RING	EC30-08-03	2	316L SA-312 STAINLESS STEEL
10	RETAINING RING	EC30-08-15	2	316L SA-312 STAINLESS STEEL
9	THREE TURN LOCKING RING	EC30-08-12	2	316L SA-312 STAINLESS STEEL
8	ADAPTOR	ED30-08-03	2	PP-HFG30%
7	ADAPTOR	ED25-08-07	1	EPDM
6	THRUST CONE	EC30-08-14	4	EPDM
5	PWT SEAL	EC30-08-13	2	PVC
4	ADAPTOR	ED25-08-02	2	316L SA-312 STAINLESS STEEL
3	FEED/CONCENTRATE PORT	ED25-08-01	1	FILAMENT WOUND EPOXY FRP
2	SHELL			
1				

SHELL Length Code	L Inch (mm)	S Span Inch (mm)	EMPTY WEIGHT lb (kg)
-1	62.1 (1579)	1@28 (711)	55 (25)
-1.5	82.1 (2067)	1@42 (1067)	63 (28)
-2	102.1 (2595)	1@56 (1422)	70 (32)
-3	142.1 (3611)	1@80 (2032)	90 (41)
-4	182.1 (4627)	2@64 (1626)	110 (50)
-5	222.1 (5643)	2@78 (1981)	125 (57)
-6	262.1 (6659)	2@92 (2337)	145 (66)
-7	302.1 (7675)	2@106 (2692)	135 (61)
-7.5	322.1 (8183)	2@114 (2896)	175 (80)
-8	342.1 (8691)	2@120 (3048)	185 (84)

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PV WAVE-450E-8



TECHNICAL REQUIREMENT
 1 TESTED ACCORDING TO ASME BOILER&PRESSURE VESSEL CODE
 SECTION X - FIBER REINFORCED PLASTIC PRESSURE VESSELS;
 2 MAX OPERATING PRESSURE - 450PSI(31.5kg/cm²)
 WATER MEDIUM TEMPERATURE - 1 49
 NOT APPLICABLE TO CORROSIVE LIQUID;
 3 LEAKAGE TEST - HYDRO TEST TESTED AT 1.1 TIMES ITS OPERATING
 PRESSURE, I.E.495PSI 42kg/cm². SAMPLE RATE - 100%

25	BOTTOM LABEL	EC30-08-24	1	ART PAPER 15"x32
24	TOP LABEL	EC30-08-23	1	ART PAPER 15"x32
23	ALUMINUM PLATE LABEL	ED45-08-08	2	ADHESIVE LABEL
22	LOGO LABEL	EC30-08-21	2	ADHESIVE LABEL
21	SERIAL NO LABEL	ED40-08-07	3	ART PAPER 20"x90
20	RETAINING RING	EC30-08-06	2	316L STAINLESS STEEL - 3 GRADE 8.8/8M5.3
19	BEARING PLATE	ED40-08-05	2	6061-T6 SB-221
18	HEAD SEAL	EC30-08-26	2	EPDM
17	FEED/CONCENTRATE O RING	ED25-08-04	2	EPDM
16	STRAP PROTECTIVE JACKET	EC30-08-19	2	SOFT PVC
15	STRAP NUT	EC30-08-18	2	HR65T-9
14	STRAP	EC30-08-17	2	304 YUPETHANE
13	SADDLE	EC30-08-16	2	304 YUPETHANE
12	STRAP SCREW	11531	4	STAINLESS STEEL GRADE 8.8 - M8*70
11	PERMEATE RETAINING RING	EC30-08-03	2	316L SA-312 STAINLESS STEEL
10	RETAINING RING	EC45-08-15	2	316L SA-312 STAINLESS STEEL
9	THREE TURN LOCKING RING	EC30-08-12	2	316L SA-312 STAINLESS STEEL
8	PERMEATE PORT	ED40-08-03	1	PP-FG30%
7	ADAPTOR O RING	EC30-08-09	1	EPDM
6	ADAPTOR O RING	EC30-08-10	1	EPDM
5	PVT SEAL	EC30-08-14	4	EPDM
4	ADAPTOR	EC30-08-13	2	PVC
3	FEED/CONCENTRATE PORT	ED40-08-02	2	316L SA-312 STAINLESS STEEL
2	SHELL	ED40-08-01	1	FILAMENT WOUND EPOXY FRP
1	ITEM DESCRIPTION	DRAWING NO. QTY MATERIAL		

SHELL Length Code	L Inch (mm)	S Span (mm)	EMPTY WEIGHT lb (kg)
-1	62.4 (1585)	1@28 (711)	60 (27)
-1.5	82.4 (2093)	1@42 (1067)	70 (31)
-2	102.4 (2601)	1@56 (1422)	80 (36)
-3	142.4 (3617)	1@80 (2032)	100 (45)
-4	182.4 (4633)	2@84 (1626)	120 (54)
-5	222.4 (5649)	2@78 (1981)	140 (63)
-6	262.4 (6665)	2@92 (2337)	160 (73)
-7	302.4 (7681)	2@106 (2692)	180 (82)
-7.5	322.4 (8189)	2@114 (2896)	190 (87)
-8	342.4 (8697)	2@120 (3048)	200 (91)

VERSION NO.	DESCRIPTION OF CHANGES	SIGNATURE	DATE
REFERENTIAL PALSTIC DIMENSIONAL TOLERANCE	IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING DRAFT ANGLE=0.5R ROOT RADIUS=0.5 SHRINKAGE (IF NECESSARY)		
DESIGN	SCALE	MATERIAL	
INSPECTION	QUANTITY	SMOOTHNESS	
APPROVAL	PROJECTION	COMPUTER CODE:	
THIS PRODUCT DRAWING CAN BE USED WITHOUT PRIOR WRITTEN APPROVAL OF WAVE CYBER.		DRAWING NO.	VERSION NO.
		ED45-08-00	0
		UNIT: MM	TOTAL PAGE: 1

WAVE CYBER (SHANGHAI) CO., LTD.
 WAVE-450E-8
 400PSI MEMBRANE HOUSING (END PORT)

PV WAVE-600E-8

Contentori per membrane - Membrane pressure vessels

CONTENITORI PER MEMBRANE IN VETRORESINA Fiberglass pressure vessels for membranes

PERMEATE PORT
OPTION F: NPT 1" FEMALE THREAD
OPTION G: Rp 1" FEMALE THREAD
OPTION H: G 1 1/2" x 11 MALE THREAD

PERMEATE PORT
OPTION M: NPT 1 1/4" MALE THREAD

FEED/CONCENTRATE

1.5" GROOVED END

DETAIL 1:1

TECHNICAL REQUIREMENT

- TESTED ACCORDING TO ASME BOILER/PRESSURE VESSEL CODE SECTION X - FIBER REINFORCED PLASTIC PRESSURE VESSELS;
- MAX OPERATING PRESSURE - 600PSI(42kg/cm²) WATER MEDIUM TEMPERATURE - 1°C - 49°C; NOT APPLICABLE TO CORROSIVE LIQUID;
- LEAKAGE TEST - HYDRO TEST TESTED AT 1.5 TIMES ITS OPERATING PRESSURE, I.E.: 900PSI 63kg/cm² SAMPLE RATE - 100%

VERSION NO.	DESCRIPTION OF CHANGES	SIGNATURE	DATE

IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING, DRAFT ANGLE 0.5°, ROOT RADIUS 0.5 DIMENSIONAL TOLERANCE X ±1 XX.0.1 X XX.0.05 ANGULAR DIFFERENCE ±0.1°

DESIGN	NAME	DATE

APPROVAL

INSPECTION

THIS PRODUCT DRAWING CAN NOT BE COPIED AND/OR USED WITHOUT PRIOR WRITTEN APPROVAL OF WAVE CYBER.

SCALE	MATERIAL	QUANTITY	DESCRIPTION
1:8			

MODEL WAVE-600E-8

PROJECTION	COMPUTER CODE:	DRAWING NO.	VERSION NO.

ED80/08/00

UNIT: MM

TOTAL PAGE: 1

ITEM	DESCRIPTION	DRAWING NO.	QTY
25	BOTTOM LABEL	EC30-08-24	1
24	TOP LABEL	EC30-08-23	1
23	ALUMINUM PLATE LABEL	ED60-08-08	2
22	LOGO LABEL	EC30-08-21	2
21	SERIAL NO. LABEL	ED60-08-07	1
20	ALLEN SCREW	11552	2
19	RETAINING RING	ED60-08-06	2
18	BEARING PLATE	ED60-08-05	2
17	HEAD SEAL	ED60-08-26	2
16	FEED/CONCENTRATE O RING	ED25-08-04	2
15	STRAP PROTECTIVE JACKET	EC30-08-19	2
14	STRAP NUT	EC30-08-18	2
13	STRAP	EC30-08-17	2
12	SADDLE	EC30-08-16	2
11	STRAP SCREW	11531	4
10	PERMEATE RETAINING RING	EC30-08-03	2
9	RETAINING RING	EC30-08-15	2
8	THREE TURN LOCKING RING	EC30-08-12	2
7	PERMEATE PORT	ED60-08-03	1
6	ADAPTOR O RING	EC30-08-06	2
5	THRUST CONE	ED25-08-07	1
4	PWT SEAL	EC30-08-14	4
3	ADAPTOR	EC30-08-13	2
2	SIDE PORT	ED60-08-02	2
1	SHELL	ED60-08-01	1

SHELL Length Code	L Inch (mm)	S Span Inch (mm)	EMPTY WEIGHT lb (kg)
-1	62.9 (1599)	1@80 (2032)	80 (36)
-1.5	82.9 (2107)	2@84 (2133)	100 (42)
-2	102.9 (2615)	2@84 (2133)	105 (48)
-3	142.9 (3631)	2@84 (2133)	135 (61)
-4	182.9 (4647)	2@84 (2133)	160 (73)
-5	222.9 (5663)	2@84 (2133)	190 (86)
-6	262.9 (6679)	2@106 (2692)	215 (98)
-7	302.9 (7695)	2@114 (2896)	245 (111)
-7.5	322.9 (8203)	2@120 (3048)	260 (118)
-8	342.9 (8711)	2@120 (3048)	275 (125)

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PERMEATE PORT
OPTION F: NPT 1" FEMALE THREAD
OPTION G: Rp 1" FEMALE THREAD
OPTION H: G 1 1/2" x 11 MALE THREAD

PERMEATE PORT
OPTION M: NPT 1 1/4" MALE THREAD

FEED/CONCENTRATE

1.5" GROOVED END

DETAIL 1:1

TECHNICAL REQUIREMENT
1 TESTED ACCORDING TO ASME BOILER/PRESSURE VESSEL CODE SECTION VIII DIVISION 1
2 MAX OPERATING PRESSURE - 1000PSI(70kg/cm²)
3 WATER MEDIUM TEMPERATURE - 1°C - 49°C
NOT APPLICABLE TO CORROSIVE LIQUID
LEAKAGE TEST - HYDRO TEST TESTED AT 1.5 TIMES ITS OPERATING PRESSURE, I.E. -1500PSI 105kg/cm² SAMPLE RATE - 100%

ITEM	DESCRIPTION	DRAWING NO.	QTY	MATERIAL
25	BOTTOM LABEL	EC30-08-24	1	ARTIPAPER 15'32
24	TOP LABEL	EC30-08-23	1	ARTIPAPER 15'32
23	ALUMINUM PLATE LABEL	ED10-08-08	2	ADHESIVE LABEL
22	LOGO LABEL	EC30-08-21	2	ADHESIVE LABEL
21	SERIAL NO. LABEL	ED10-08-07	1	ARTIPAPER 20'60
20	ALLEN SCREW	ED10-08-06	2	STAINLESS STEEL GRADE 8.8 M5'8
19	RETAINING RING	ED10-08-05	2	304
18	BEARING PLATE	ED10-08-05	2	6061-T6 - SB-221
17	HEAD SEAL	ED25-08-04	2	SI
16	FEED/CONCENTRATE O-RING	ED25-08-04	2	EPDM
15	STRAP PROTECTIVE JACKET	EC30-08-19	2	SOFT PVC
14	STRAP NUT	EC30-08-18	2	Hpb51-9
13	STRAP	EC30-08-17	2	304
12	SADDLE	EC30-08-16	2	POLYURETHANE
11	STRAP SCREW	11531	4	STAINLESS STEEL GRADE 8.8 M8'70
10	PERMEATE RETAINING RING	EC30-08-03	2	316L - SA-312 STAINLESS STEEL
9	RETAINING RING	EC10-08-15	2	316L - SA-312 STAINLESS STEEL
8	THREE TURN LOCKING RING	ED10-08-12	2	316L - SA-312 STAINLESS STEEL
7	PERMEATE PORT	ED10-08-03	1	PP-FG300%
6	ADAPTOR O RING	ED25-08-07	2	EPDM
5	THRUST CONE	EC30-08-14	4	PP-FG300%
4	PWT SEAL	EC30-08-13	2	PVC
3	ADAPTOR	ED10-08-02	2	00C22Ni15Mo5N
2	FEED/CONCENTRATE PORT	ED10-08-01	1	FILAMENT WOUND EPOXY FRP
1	SHELL	ED10-08-01	1	MATERIAL

SHELL Length Code	L Inch (mm)	S Span Inch (mm)	EMPTY WEIGHT lb (kg)
-1	65.8 (1671)	1@28 (711)	115 (52)
-1.5	85.8 (2179)	1@42 (1067)	135 (61)
-2	105.8 (2687)	1@56 (1422)	155 (70)
-3	145.8 (3709)	1@80 (2032)	200 (91)
-4	185.8 (4719)	2@64 (1626)	240 (109)
-5	225.8 (5735)	2@78 (1981)	285 (129)
-6	265.8 (6751)	2@92 (2337)	325 (147)
-7	305.8 (7767)	2@106 (2692)	365 (166)
-7.5	325.8 (8275)	2@114 (2896)	385 (175)
-8	345.8 (8783)	2@120 (3048)	405 (184)

VERSION NO. _____ **DESCRIPTION OF CHANGES** _____ **SIGNATURE** _____ **DATE** _____
REFERENTIAL PLASTIC SHRINKAGE (IF NECESSARY) _____
IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING, DRAFT ANGLE 0.5°, ROOT RADIUS 0.5 DIMENSIONAL TOLERANCE X.±1 X.XX±0.05 ANGULAR DIFFERENCE ±0.1°

SIGNATURE _____ **DATE** _____
DESIGN _____ **INSPECTION** _____ **APPROVAL** _____

SCALE 1:8
QUANTITY _____
MATERIAL _____
SMOOTHNESS _____

MODEL WAVE-1000E-8
DESCRIPTION 1000PSI MEMBRANE HOUSING (END PORT)
COMPUTER CODE: _____
DRAWING NO. ED10-08-00
VERSION NO. 0
UNIT: MM TOTAL PAGE: 1

WAVE CYBER (SHANGHAI) CO., LTD.

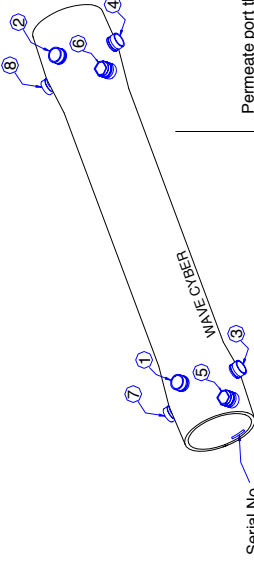
THIS PRODUCT DRAWING CAN NOT BE COPIED AND/OR USED WITHOUT PRIOR WRITTEN APPROVAL OF WAVE CYBER.

PV WAVE 8" SIDE PORT / MULTIPORT

Tabella specifiche e composizione codice - Specification chart and code composition

CONTENITORI PER MEMBRANE IN VETRORESINA Fiberglass pressure vessels for membranes

FEED/CONCENTRATE PORT CONFIGURATIONS



Serial No. _____

This chart is used to specify the location of the ports for each different vessel configuration in the system. Always use this chart to specify proper side port locations. If you have any questions, call the factory. Please use this chart as follows:

- Determine proper port sizes on multiple port vessels.
- Determine the proper port location and quantity for each vessel.
- Starting at the serial number end, enter the location of the first port followed by the port size. Repeat this for each port on the serial number end.
- Moving to the opposite end, enter the location of the first port followed by the port size. Repeat this for each port on this end.
- Enter this information at the bottom of the ordering page for each vessel configuration.
- Sign and date the ordering page before you send it to us.

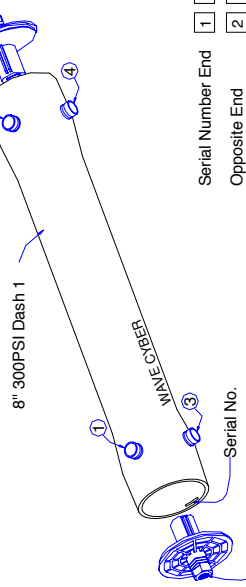
Port Size Code	NEW
R 1-1/2" Grooved End	
S 2" Grooved End	
T 2-1/2" Grooved End	
U 3" Grooved End	

Note: Three ports per end maximum
2-1/2" - 3" ports are not allowed 90 degrees from any other port.
See current product options on Attachment 2.

Serial No. End
Opposite End

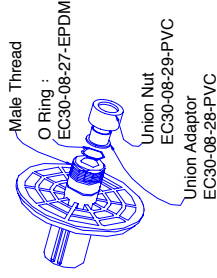
EXAMPLE

This example is provided to show you the proper way to specify your port locations. Please understand this example before filling out the ordering page. For questions concerning the use of this chart, please call the factory.

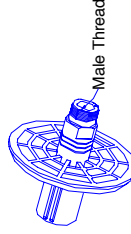


Serial No. _____
Female Thread Permeate Port _____

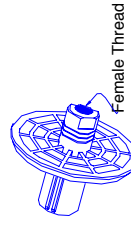
Permeate port thread type options:



Male Thread G 1 1/2"X11 Code H
This thread fits a 1 1/4" union nut (Stainless Steel option is available. Please contact customer service.)



Male Thread NPT 1 1/4" Code M



Female Thread NPT 1" Code F
Female Thread Rp 1" Code G

Serial Number End
Opposite End
Model: WAVE-300P-8-1R3S2R4S-F-1-WH

Membrane Housing Specification Chart

WAVE - 300 - P - 8 - 1 R 6 R - H - - BL Standard model

Membrane Housing Paint Color Options:

WH	White
BL	Blue

Length Code: See Attachment 1 for options

Permeate Port Thread Options:

H	Male Thread G 1 1/2"X11
M	Male Thread NPT 1 1/4"
F	Female Thread NPT 1"
G	Female Thread Rp 1"

Feed/Concentrate Port Configurations: See Feed/Concentrate Port Chart for options and code information

Membrane Housing Diameter: 8"

Feed/Concentrate Port Type: Side Port

Membrane Housing Max. Operating Pressure Options:

300	300PSI
450	450PSI
600	600PSI
1000	1000PSI
1200	1200PSI

Brand Name _____

Attachment 1: Membrane Housing Length Options

F (element)	1	1.5	2	3	4	5	6	7	7.5	8
Code	1	1.5	2	3	4	5	6	7	7.5	8

	1.5"	2"	2.5"	3"
300PSI	✓	✓	✓	✓
450PSI	✓	✓	✓	✓
600PSI	✓	✓	✓	✓
1000PSI	✓	✓	✓	✓
1200PSI	✓	✓	✓	✓

Ordering:

Model _____ Quantity _____
Contact Person _____ Contact _____

PV WAVE-450P-8

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PERMEATE PORT
OPTION F: NPT 1" FEMALE THREAD
OPTION G: Rp 1" FEMALE THREAD
OPTION H: G 1 1/2"x11 MALE THREAD

FEED/CONCENTRATE
(SIZE & QTY OPTIONAL)

PERMEATE PORT
(OPTION M: NPT 1 1/4" MALE THREAD)

FEED/CONCENTRATE
(SIZE & QTY OPTIONAL)

IDEDETAIL 1:1

IDEDETAIL 1:1

IDEDETAIL 1:1

TECHNICAL REQUIREMENT
TESTED ACCORDING TO ASME BOILER & PRESSURE VESSEL CODE
SECTION X - FIBER REINFORCED PLASTIC PRESSURE VESSELS;
2 MAX OPERATING PRESSURE - 450PSI (31.0kg/cm²)
WATER MEDIUM TEMPERATURE - 1°C - 49°C,
NOT APPLICABLE TO CORROSIVE LIQUID;
3 LEAKAGE TEST - HYDRO TEST - TESTED AT 1.5 TIMES ITS OPERATING PRESSURE, I.E. - 675PSI - 47.25kg/cm² - SAMPLE RATE - 100%

VERSION NO. DESCRIPTION OF CHANGES SIGNATURE DATE
IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING, DRAFT ANGLE 0.5°, ROOT RADIUS 0.5 DIMENSIONAL TOLERANCE ±0.1, X.0625 ANGULAR DIFFERENCE 0.1°

WAVE CYBER (SHANGHAI) CO., LTD.
MODEL WAVE-450P-8
MATERIAL SMOOTHNESS
QUANTITY 16
PROJECTION COMPUTER CODE: 450PSI MEMBRANE HOUSING
DRAWING NO. EC45-08-00 VERSION NO. 0
DO NOT MEASURE THE DIMENSIONS. UNIT: MM TOTAL PAGE: 1

ITEM	DESCRIPTION	DRAWING NO.	QTY	MATERIAL
26	BOTTOM LABEL	EC30-08-24	1	ART PAPER 15*32
25	TOP LABEL	EC30-08-23	1	ART PAPER 15*32
24	ALUMINUM PLATE LABEL	EC45-08-22	2	ADHESIVE LABEL
23	LOGO LABEL	EC30-08-21	2	ADHESIVE LABEL
22	SERIAL NO. LABEL	EC45-08-20	1	ART PAPER 20*60
21	ALLEN SCREW	11508	4	M5*14 STAINLESS STEEL, GRADE 8.8
20	STRAP PROTECTIVE JACKET	EC30-08-19	2	SOFT PVC
19	STRAP SCREW	11531	4	M6*90 STAINLESS STEEL, GRADE 8.8
18	STRAP NUT	EC30-08-18	4	HP651-9
17	STRAP	EC30-08-17	2	304
16	SADDLE	EC30-08-16	2	POLYURETHANE
15	THREE TURN LOCKING RING	EC45-08-15	2	316 STAINLESS STEEL
14	PWT SEAL	EC30-08-14	4	EPDM
13	ADAPTOR	EC30-08-13	2	PVC
12	RETAINING RING	EC30-08-12	2	316L - SA-312 STAINLESS STEEL
11	HEAD SEAL	EC30-08-26	2	EPDM
10	PERMEATE PORT (450PSI)	EC30-08-10	2	PP-HFG30%
9	BEARING PLATE	EC45-08-09	2	6061-T6 - SB-221
8	ADAPTOR ORING	EC30-08-08	2	EPDM
7	THRUST CONE	EC30-08-07	1	PP-HFG30%
6	SIDEPORT RETAINING RING	EC30-08-06	4	316L - SA-312 STAINLESS STEEL
5	SIDEPORT SEAL	EC30-08-05	2	EPDM
4	PERMEATE SIDEPORT SEAL	EC30-08-04	2	EPDM
3	PERMEATE RETAINING RING	EC30-08-03	2	316L - SA-312 STAINLESS STEEL
2	SIDEPORT	EC45-08-02	2	316L - SA-312 STAINLESS STEEL
1	SHELL	EC45-08-01	1	FILAMENT WOUND EPOXY FRP MATERIAL

SHELL Length Code	L Inch (mm)	P Standard Inch (mm)	S Span Inch (mm)	EMPTY WEIGHT lb (kg)
-1	58.7 (1491)	47 (1194)	1@28 (711)	76 (35)
-1.5	78.7 (1999)	67 (1702)	1@42 (1067)	89 (40)
-2	98.7 (2507)	87 (2210)	1@56 (1422)	102 (46)
-3	138.7 (3523)	127 (3226)	1@80 (2032)	128 (58)
-4	178.7 (4539)	167 (4242)	2@64 (1626)	154 (70)
-5	218.7 (5555)	207 (5258)	2@78 (1981)	180 (82)
-6	258.7 (6571)	247 (6274)	2@92 (2337)	205 (93)
-7	298.7 (7587)	287 (7290)	2@106 (2692)	231 (105)
-7.5	318.7 (8095)	307 (7798)	2@114 (2896)	244 (111)
-8	338.7 (8603)	327 (8306)	2@120 (3048)	257 (117)

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PV WAVE-600P-8

PERMEATE PORT
(OPTION M: NPT 1/4" MALE THREAD)

FEED/CONCENTRATE
(SIZE & QTY OPTIONAL)

FEED/CONCENTRATE
(SIZE & QTY OPTIONAL)

PERMEATE PORT
OPTION F: NPT 1" FEMALE THREAD
OPTION G: Rp 1" FEMALE THREAD
OPTION H: G 1 1/2"x11 MALE THREAD

II DETAIL
1:1

I DETAIL
1:1

TECHNICAL REQUIREMENT

- TESTED ACCORDING TO ASME BOILER&PRESSURE VESSEL CODE SECTION X - FIBER REINFORCED PLASTIC PRESSURE VESSELS.
- MAX OPERATING PRESSURE - 600PSI(42kg/cm²)
- WATER MEDIUM TEMPERATURE - 1°C - 49°C, NOT APPLICABLE TO CORROSIVE LIQUID.
- LEAKAGE TEST - HYDRO TEST. TESTED AT 1.5 TIMES ITS OPERATING PRESSURE, I.E.: 900PSI - 63kg/cm² SAMPLE RATE - 100%

VERSION NO. _____ **DESCRIPTION OF CHANGES** _____ **SIGNATURE** _____ **DATE** _____

REFERENTIAL PLASTIC SHRINKAGE (IF NECESSARY)
IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING, DRAFT ANGLE: 0.5°, ROOT RADIUS: 0.5 DIMENSIONAL TOLERANCE: X: ±1 X.XX/0.05 ANGULAR DIFFERENCE: ±0.1°

DESIGN	INSPECTION	APPROVAL	NAME	DATE

SCALE 1:6

QUANTITY _____

PROJECTION _____

COMPUTER CODE: _____

MODEL WAVE-600P-8

MATERIAL _____

SMOOTHNESS _____

DESCRIPTION _____

600PSI MEMBRANE HOUSING

DRAWING NO. _____

VERSION NO. _____

EC60-08-00

UNIT: MM

TOTAL PAGE: 1

ITEM	DESCRIPTION	DRAWING NO.	QTY
26	BOTTOM LABEL	EC30-08-24	1
25	TOP LABEL	EC30-08-23	1
24	ALUMINIUM PLATE LABEL	ARTPAPER 15*32	2
23	LOGO LABEL	EC60-08-22	2
22	SERIAL NO LABEL	EC60-08-21	2
21	SERIAL NO LABEL	ARTPAPER 20*80	1
20	SHRIMP SCREW	1308	4
19	STRAP SCREW	EC30-08-19	2
18	STRAP NUT	316L	2
17	SADDLE	EC30-08-17	4
16	THREE TURN LOCKING RING	EC60-08-16	2
15	PWT SEAL	EC30-08-15	2
14	ADAPTOR	EC30-08-14	4
13	RETAINING RING	EC30-08-13	2
12	HEAD SEAL	EC30-08-12	2
11	PERMEATE PORT (600PSI)	EC60-08-10	2
10	BEARING PLATE	EC60-08-09	2
9	ADAPTOR RING	EC30-08-08	2
8	THRUST CONE	EC30-08-07	1
7	SIDEPORT SEAL	EC60-08-06	4
6	CURVED SIDEPORT SEAL	EC30-08-05	2
5	PERMEATE RETAINING RING	EC60-08-04	2
4	SIDE PORT	EC30-08-03	2
3	SHELL	EC60-08-02	2
2	SHELL	EC60-08-01	1
1	DESCRIPTION	_____	_____

SHELL Length Code	L Inch (mm)	P Standard Inch (mm)	S Span Inch (mm)	EMPTY WEIGHT lb (kg)
-1	59 (1501)	47 (1194)	1@28 (711)	103 (47.4)
-1.5	79 (2009)	67 (1702)	1@42 (1067)	121 (55.7)
-2	99 (2517)	87 (2210)	1@56 (1422)	139 (64)
-3	139 (3533)	127 (3226)	1@80 (2032)	175 (80.6)
-4	179 (4549)	167 (4242)	2@64 (1626)	211 (97.2)
-5	219 (5565)	207 (5258)	2@78 (1981)	247 (113.7)
-6	259.1 (6581)	247 (6274)	2@92 (2337)	282 (130)
-7	299 (7597)	287 (7290)	2@106 (2692)	318 (146.5)
-7.5	319 (8105)	307 (7798)	2@114 (2896)	326 (154.7)
-8	339 (8613)	327 (8306)	2@120 (3045)	355 (163.5)

PV WAVE-1000P-8

CONTENITORI PER MEMBRANE IN VETRORESINA Fiberglass pressure vessels for membranes

FEED/CONCENTRATE (SIZE & QTY OPTIONAL)

PERMEATE PORT (OPTION M: NPT 1 1/4" MALE THREAD)

PERMEATE PORT (OPTION F: NPT 1" FEMALE THREAD / OPTION G: Rp 1" FEMALE THREAD / OPTION H: G 1 1/2" X 11 MALE THREAD)

I DETAIL 1/2

II DETAIL 1/2

TECHNICAL REQUIREMENT

- TESTED ACCORDING TO ASME BOILER & PRESSURE VESSEL CODE SECTION X - FIBER REINFORCED PLASTIC PRESSURE VESSELS;
- MAX OPERATING TEMPERATURE - 1000PSI WATER MEDIUM TEMPERATURE - 1°C - 49°C, NOT APPLICABLE TO CORROSIVE LIQUID;
- LEAKAGE TEST - HYDRO TEST TESTED AT 1.5 TIMES ITS OPERATING PRESSURE, I.E.: 1500PSI 105kg/cm² SAMPLE RATE - 100%

VERSION NO. EC30-08-24

REFERENTIAL PALSTIC SHRINKAGE (IF NECESSARY)

DESCRIPTION OF CHANGES

IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING, DRAFT ANGLE 0.5°, ROOT RADIUS 0.5 DIMENSIONAL TOLERANCE X.±1 X.XX0.1 X.XXX0.05 ANGULAR DIFFERENCE .±0.1°

WAVE CYBER (SHANGHAI) CO., LTD.

MODEL WAVE-1000P-8

DESCRIPTION 1000PSI MEMBRANE HOUSING

SCALE 1:8

MATERIAL 1:8

QUANTITY

SMOOTHNESS

PROJECTION

COMPUTER CODE:

DRAWING NO. EC10-08-00

VERSION NO. 0

DO NOT MEASURE THE DIMENSIONS. UNIT: MM TOTAL PAGE: 1

ITEM	DESCRIPTION	DRAWING NO.	QTY	MATERIAL
26	BOTTOM LABEL	EC30-08-24	1	ARTPAPER 15'32
25	TOP LABEL	EC30-08-23	1	ARTPAPER 15'32
24	ALUMINUM PLATE LABEL	EC10-08-22	2	ADHESIVE LABEL
23	LOGO LABEL	EC30-08-21	2	ADHESIVE LABEL
22	SERIAL NO. LABEL	EC10-08-20	1	ARTPAPER 20'60
21	ALLEN SCREW	115008	4	M5*14 STAINLESS STEEL, GRADE 8.8
20	STRAP PROTECTIVE JACKET	EC30-08-19	2	SOFT PVC
19	STRAP SCREW	11531	4	M8*90 STAINLESS STEEL, GRADE 8.8
18	STRAP NUT	EC30-08-18	4	H8951-9
17	STRAP	EC30-08-17	2	304
16	SADDLE	EC30-08-16	2	POLYURETHANE
15	THREE TURN LOCKING RING	EC10-08-15	2	316 STAINLESS STEEL
14	PWT SEAL	EC30-08-14	4	EPDM
13	ADAPTOR	EC30-08-13	2	PVC
12	RETAINING RING	EC10-08-12	2	316L, SA-312 STAINLESS STEEL
11	HEAD SEAL	EC30-08-26	2	EPDM
10	PERMEATE PORT (1000PSI)	EC10-08-10	2	684T G30%
9	PERMEATE PORT	EC10-08-09	2	684T 16" SB221
8	ADAPTOR O RING	EC30-08-08	2	PP-LEG90%
7	THURUST CONE	EC30-08-07	2	PP-LEG90%
6	SIDEPORT RETAINING RING	EC30-08-06	4	316L, SA-312 STAINLESS STEEL
5	SIDEPORT SEAL	EC10-08-05	2	EPDM
4	CURVED SIDEPORT SEAL	EC10-08-04	2	EPDM
3	PERMEATE RETAINING RING	EC30-08-03	2	316L, SA-312 STAINLESS STEEL
2	SIDE PORT	EC10-08-02	2	00C22NISM03N
1	SHELL	EC10-08-01	2	FILAMENT WOUND EPOXY FRP

SHELL Length Code	L Inch (mm)	P Standard Inch (mm)	S Span Inch (mm)	EMPTY WEIGHT lb (kg)
-1	62.1 (1579)	47 (1194)	1@28 (711)	130 (59)
-1.5	82.1 (2087)	67 (1702)	1@42 (1067)	153 (70)
-2	102.1 (2595)	87 (2210)	1@56 (1422)	176 (80)
-3	142.1 (3611)	127 (3226)	1@80 (2032)	222 (101)
-4	182.1 (4627)	167 (4242)	2@64 (1626)	268 (122)
-5	222.1 (5643)	207 (5258)	2@78 (1981)	314 (143)
-6	262.1 (6659)	247 (6274)	2@92 (2337)	360 (164)
-7	302.1 (7675)	287 (7290)	2@106 (2692)	406 (185)
-7.5	322.1 (8183)	307 (7796)	2@114 (2896)	429 (195)
-8	342.1 (8691)	327 (8306)	2@120 (3046)	452 (205)

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PV WAVE 4" END PORT

Tabella specifiche e composizione codice - *Specification chart and code composition*

Membrane Housing Specification Chart

WAVE - 300 - E - 4 - DR - - - BL

Standard model

Membrane Housing Paint Color Options

WH	White
BL	Blue

Length Code
See attachment 1 for options

Permeate port thread
See product data sheet

Membrane Housing Diameter 4"

Feed/Concentrate Port Type: End Port
See product data sheet

Membrane Housing Max. Operating Pressure Options:

300	300PSI
400	400PSI
600	600PSI
1000	1000PSI

Brand Name

Attachment 1: Membrane Housing Length options

Element	1	2	3	4	5	6
Code	1	2	3	4	5	6

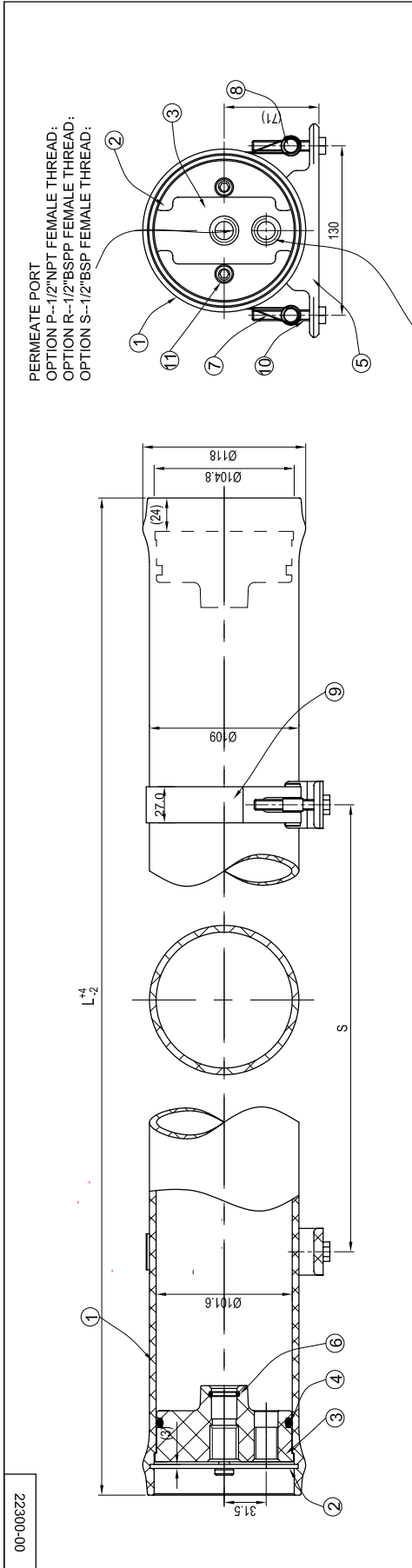
Ordering:

Model: _____ Quantity: _____

Contact Person: _____ Contact: _____

PV WAVE-300E-4

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes



PERMEATE PORT
OPTION P--1/2"NPT FEMALE THREAD;
OPTION R--1/2"BSP FEMALE THREAD;
OPTION S--1/2"BSP FEMALE THREAD;

FEED/CONCENTRATE
OPTION A--1/2"NPT FEMALE THREAD
OPTION B--3/4"NPT FEMALE THREAD
OPTION C--1/2"BSP FEMALE THREAD
OPTION D--3/4"BSP FEMALE THREAD
OPTION E--1/2"BSP FEMALE THREAD
OPTION F--3/4"BSP FEMALE THREAD

TECHNICAL REQUIREMENT:
MAX OPERATING PRESSURE: 300PSI (21kg/cm²),
WATER MEDIUM TEMPERATURE: 1°C~49°C,
NOT APPLICABLE TO CORROSIVE LIQUID;
NOTE: DIMENSIONS IN PARENTHESIS ARE REFERENCE ONLY.

PERMEATE PORT	FS	PP	BSP 1/2" BSP 3/4"	10258	
	ES	PP	BSP 1/2" BSP 1/2"	10257	
	CR	PP	BSP 1/2" BSP 3/4"	10256	
	DR	PP	BSP 1/2" BSP 3/4"	10255	
	AP	PP	NPT 1/2" NPT 1/2"	10254	
	BP	PP	NPT 1/2" NPT 3/4"	10253	
	FS	PVC	BSP 1/2" BSP 3/4"	10122	
	ES	PVC	BSP 1/2" BSP 1/2"	10121	
	CR	PVC	BSP 1/2" BSP 3/4"	10120	
	DR	PVC	BSP 1/2" BSP 3/4"	10119	
	AP	PVC	NPT 1/2" NPT 1/2"	10118	
	BP	PVC	NPT 1/2" NPT 3/4"	10117	
NAME	DRAWING NO.	CODE	MATERIAL	SPECS	COMPUTER CODE

Shell Length Code	L Inch (mm)	S Span Inch (mm)	Weight lb (kg)	Membrane Size
B	18.6 (461)	1@6 (1@150)	4.4 (2)	Ø4"×14"
A	25.6 (636)	1@7.8 (1@200)	6.2 (2.8)	Ø4"×21"
6	244.3 (6201)	2@110 (2@2800)	41.2 (18.6)	Ø4"×40"
5	204.3 (5165)	2@87 (2@2200)	34.1 (15.4)	Ø4"×40"
4	164.3 (4169)	2@66 (2@1700)	26.8 (12.4)	Ø4"×40"
3	124.3 (3153)	1@102 (1@2600)	20.8 (9.4)	Ø4"×40"
2	84.3 (2137)	1@66 (1@1700)	14.6 (6.6)	Ø4"×40"
1	44.3 (1121)	1@28 (1@711)	10.2 (4.6)	Ø4"×40"

11 ALLEN SCREW		4	M8*20 GRADE 8.8	20127	
10 STRAP SCREW		4	M8*30 GRADE 8.8	20128	
9 STRAP PROTECTIVE	(22300-09)ED25-04-09	2	EPDM	10189	
8 JACKET	(22300-08)ED25-04-08	4	Hb559-1	20124	
7 STRAP NUT	(22300-07)ED25-04-07	2	304	20124	
6 STRAP SEAL	(22300-06)ED25-04-06	2	EPDM	10178	
5 SIDE SEAL	(22300-05)ED25-04-05	2	POLYURETHANE (BLACK)	10140	
4 BIG SEAL	(22300-04)ED25-04-04	2	EPDM	10177	
3 PERMEATE PORT	SEE "PERMEATE PORT"	2	PVC OR PP	SEE THE CHART	
2 BAFFLE	(22300-02)ED25-04-02	4	316L	20017	
1 4"PV(300PSI)	(22300-01)ED30-04-01	1	EPOXY + FIBER GLASS	COMPUTER CODE	
ITEM	DESCRIPTION	DRAWING NO.	QTY	MATERIAL	COMPUTER CODE

REFERENTIAL PLASTIC SHRINKAGE (IF NECESSARY):	SIGNATURE	DATE	SCALE	QUANTITY	MATERIAL	DESCRIPTION	MODEL	WAVE-300E-4
	NAME		1:3					
	DESIGN							
	INSPECTION							
	APPROVAL							
THIS PRODUCT DRAWING CAN NOT BE COPIED AND/OR USED WITHOUT PRIOR WRITTEN APPROVAL OF WAVE CYBER.								
							PROJECTION	COMPUTER CODE
							300E-4 MEMBRANE HOUSING	VERSION NO.
								(22300-00)ED30-04-00
								5
							DO NOT MEASURE THE DIMENSIONS	UNIT:MM
								TOTAL PAGE:1

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PV WAVE-1000E-4

Technical drawing showing front, side, and cross-sectional views of the PV WAVE-1000E-4 membrane pressure vessel. Dimensions include: L=33, Ø117, Ø104.4, 32, 127, S, 27, 71, 8, 27, 35, 19, 20, 15, 16, 17, 18, 19, 20, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20. Callouts include: FEED/CONCENTRATE PORT 3/4" NPT MALE THREAD, PERMEATE PORT 1/2" NPT MALE THREAD, SERIAL NUMBER, and various numbered callouts (1-20) for assembly details.

TECHNICAL REQUIREMENT:
 MAX OPERATING PRESSURE: 1000PSI (70kg/cm²),
 WATER MEDIUM TEMPERATURE: 1°C ~ 49°C,
 NOT APPLICABLE TO CORROSIVE LIQUID;

REFERENTIAL PLASTIC SHRINKAGE (IF NECESSARY):

DESIGN	NAME	DATE
INSPECTION		
APPROVAL		

THIS PRODUCT DRAWING CAN NOT BE COPIED AND/OR USED WITHOUT PRIOR WRITTEN APPROVAL OF WAVE CYBER.

IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING, DRAFT ANGLE=45°, ROOT RADIUS=0.5 TOLERANCE: X.±1 XX.±0.1 XXX.±0.05 ANGULAR DIFFERENCE: ±0.1°

WAVE CYBER (SHANGHAI) CO., LTD.

DESIGN	SCALE	MATERIAL	MODEL	WAVE-1000E-4
INSPECTION	1:3		DESCRIPTION	
APPROVAL			QUANTITY	1000 PSI MEMBRANE HOUSING
			PROJECTION	COMPUTER CODE
			DRAWING NO.	22100-00
			VERSION NO.	3
			DO NOT MEASURE THE DIMENSIONS	UNIT: MM
			TOTAL PAGE:	1

ITEM	DESCRIPTION	QTY	MATERIAL	COMPUTER CODE
20	ALUMINIUM PLATE LABEL	1	40413	
19	STRAP PROTECTIVE JACKET	2	22300-09	10189
18	SADDLE	2	22300-05	10140
17	STRAP NUT	4	22300-08	20124
16	STRAP	2	A866. 304	20124
15	STRAP SCREW	4	M8-S0 GRADE 8.8	20128
14	NIPY SEAL	2	EPDM 512	10178
13	PERMEATE PORT SEAL	2	EPDM 512	10187
12	RETAINING RING	2	SA-312. 254SMo	20109
11	END PORT	2	SA-312. 316L	20152
9	THREE TURN LOCKING RING	2	AS80. 316	20077
8	BIG RETAINING RING	2	6061-T651. SB-211	20070
7	BEARING PLATE	4	SA-213. 316L	20121
6	RETAINING RING	2	EPDM 512	10177
5	HEAD SEAL	2	ABS	10205
4	SEALING END PLATE	2	EPDM 512	10186
3	END PORT SEAL	2	ABS	10186
2	PERMEATE PIPE	2	4"MPV(1000PSI)	10191
1	MEMBRANE	1	EPoxy + FIBER GLASS	
	DRAWING NO.	22100-01		
	QTY	1		
	MATERIAL			
	COMPUTER CODE			

PV WAVE 4" SIDE PORT

Tabella specifiche e composizione codice - Specification chart and code composition

CONTENTITORI PER MEMBRANE IN VETRORESINA Fiberglass pressure vessels for membranes

Membrane Housing Spicification Chart

WAVE - 300 - P - 4 - 1 R 6 R - R - - BL Standard model

Membrane Housing Paint Color Options

WH	White
BL	Blue

Length Code
See Attachment 1 for options

Permeate Port Thread G 1/2" F BSP
Code R

Feed/Concentrate Port Configurations
See Feed/Concentrate Port Chart for options and code information

Membrane Housing Diameter: 4"

Feed/Concentrate Port Type: Side Port
See product data sheet

Membrane Housing Max. Operating Pressure Options:

300	300PSI
450	450PSI
600	600PSI
1000	1000PSI

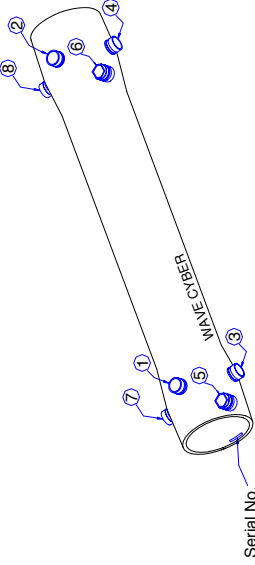
Brand Name _____

Attachment 1: Membrane Housing Length Options

F (element)	1	2	3	4	5	6
Code	1	2	3	4	5	6

Ordering: Model _____ Quantity _____
Contact Person _____ Contact _____

FEED/CONCENTRATE PORT CONFIGURATIONS



Serial No.

This chart is used to specify the location of the ports for each different vessel configuration in the system. Always use this chart to specify proper side port locations. If you have any questions, call the factory. Please use this chart as follows:

- Determine proper port sizes on multiple port vessels.
- Determine the proper port location and quantity for each vessel.
- Starting at the serial number end, enter the location of the first port followed by the port size. Repeat this for each port on the serial number end.
- Moving to the opposite end, enter the location of the first port followed by the port size. Repeat this for each port on this end.
- Enter this information at the bottom of the ordering page for each vessel configuration.
- Sign and date the ordering page before you send it to us.

Port Size Code	
R	1" Grooved End (victaulic)

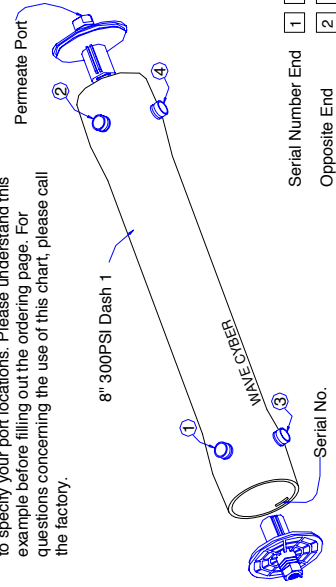
Note: 2 ports per end maximum

Serial No. End

Opposite End

EXAMPLE

This example is provided to show you the proper way to specify your port locations. Please understand this example before filling out the ordering page. For questions concerning the use of this chart, please call the factory.



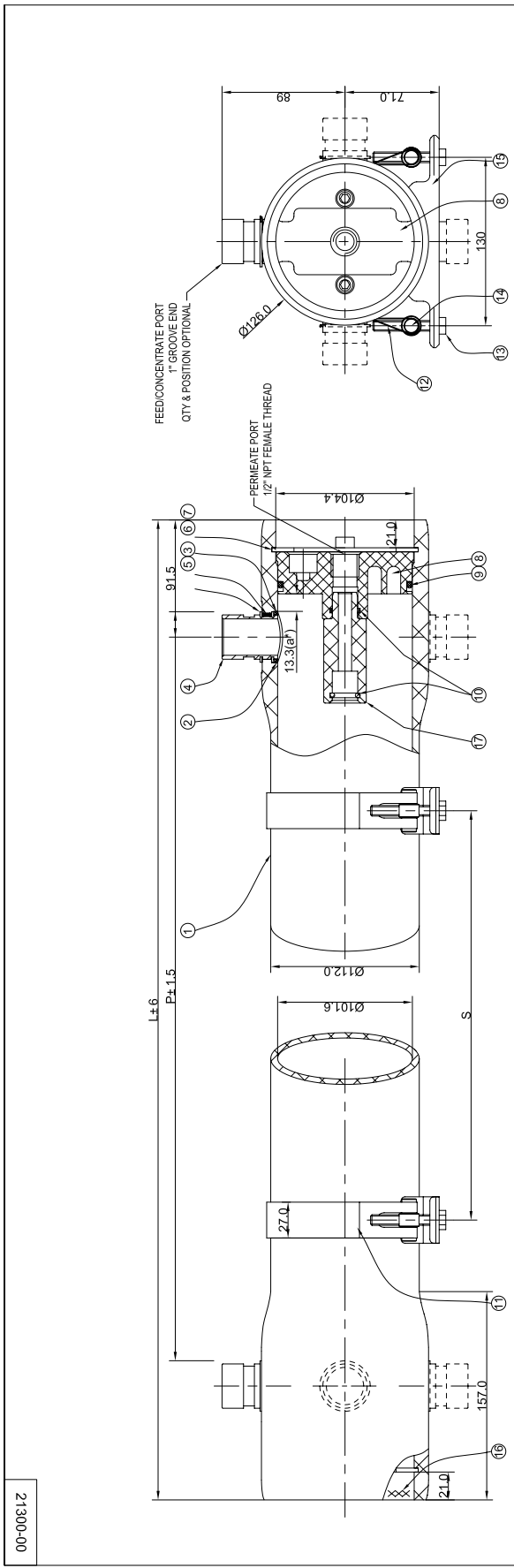
Serial Number End

Opposite End

Model: WAVE-300P-4-1R3S2R4S-1-WH

PV WAVE-300P-4

CONTENITORI PER MEMBRANE IN VETRORESINA Fiberglass pressure vessels for membranes



TECHNICAL REQUIREMENT:
 MAX OPERATING PRESSURE: 300PSI (21kg/cm²),
 WATER MEDIUM TEMPERATURE: 1°C ~ 49°C,
 NOT APPLICABLE TO CORROSIVE LIQUID;
 NOTE: DIMENSIONS IN PARENTHESIS ARE REFERENCE ONLY.

SERIAL NO. LABEL	1	ART/PAPER	402/4
16 SADDLE	22300-05	2x23 IPI (S30D)	10140
14 STRAP NUT	4x6 IHRS9-1		20124
13 STRAP SCREW	2x3 IHRS9-1	304 STAINLESS STEEL GRADE 316	20124
12 STRAP	2x3 IHRS9-1	304 STAINLESS STEEL GRADE 316	20124
11 STRAP PROTECTIVE JACKET	22300-07		20124
10 MPV SEAL	22300-09	2x3 SOFT PVC	10188
9 BEV SEAL	22300-06	2 EPDM512	10178
8 RETAINING RING	22300-04	2 EPDM512	10177
7 BAFFLE	22300-02	4 AS50 304	20117
6 SIDE PORT RETAINING RING	21300-03	2 AS50 316	20122
5 RETAINING RING	21300-14	2 AS50 316	20169
4 SIDE PORT	21300-04	2 SAS312 316L	20166
3 SIDE PORT SEAL	21300-15	2 EPDM512	10178
2 SIDE PORT SEAL	21300-15	2 EPDM512	10171-1
1 4" SHELL (300PSI)	21300-01	1 FIBER GLASS + EPOXY	

SHELL Length Code	L Inch (mm)	P Standard Inch (mm)	S Span Inch (mm)	EMPTY WEIGHT lb (kg)
1	49.2 (1250)	42 (1067)	28"1 (711)	17 (6)
2	89.2 (2266)	82 (2083)	56"1 (1422)	25 (11)
3	129.2 (3282)	122 (3099)	80"1 (2032)	33 (15)
4	169.2 (4298)	162 (4115)	64"2 (1626)	40 (18)
5	209.2 (5314)	202 (5131)	78"2 (1981)	48 (22)
6	249.2 (6330)	242 (6147)	92"2 (2337)	56 (25)

DESIGN	SCALE	MATERIAL	MODEL
INSPECTION	1:3		WAVE-300P-4
APPROVAL	QUANTITY	SMOOTHNESS	DESCRIPTION
THIS PRODUCT DRAWING CAN NOT BE COPIED AND/OR USED WITHOUT PRIOR WRITTEN APPROVAL OF WAVE CYBER.		COMPUTER CODE	300PSI MEMBRANE HOUSING
DO NOT MEASURE THE DIMENSIONS.		DRAWING NO.	VERSION NO.
UNIT: MM		21300-00	6
		TOTAL PAGE: 1	

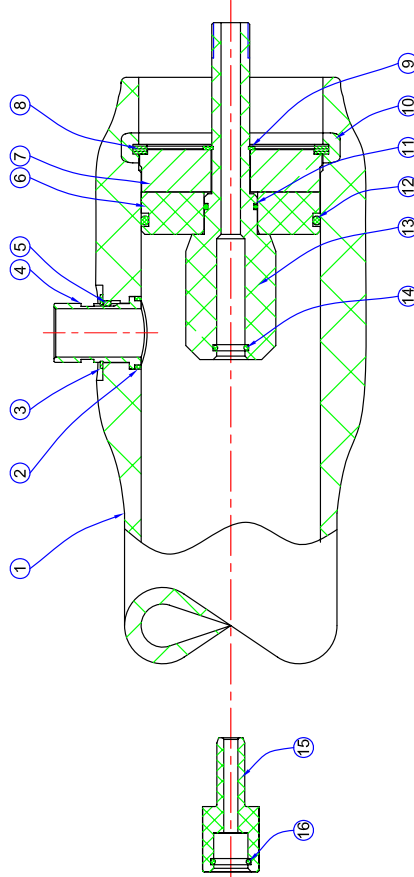
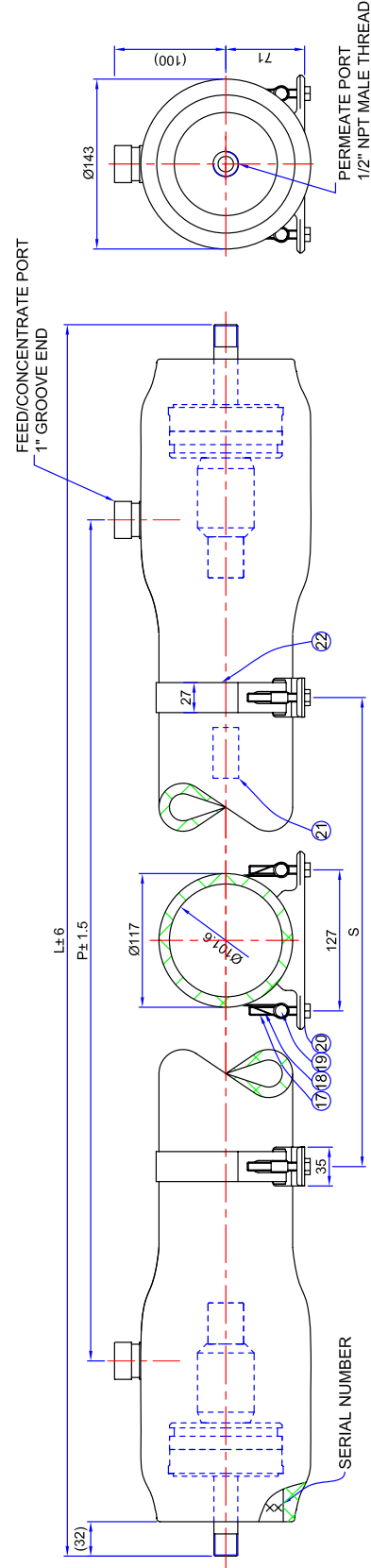
IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING, DRAFT ANGLE=0.5° ROOT RADIUS=0.5 TOLERANCE: X±1 X.XX±0.05 ANGULAR DIFFERENCE: ±0.1°

WAVE CYBER (SHANGHAI) CO., LTD.

21300-000

PV WAVE-1000P-4

CONTENITORI PER MEMBRANE IN VETRORESINA Fiberglass pressure vessels for membranes



TECHNICAL REQUIREMENT:
MAX OPERATING PRESSURE: 1000PSI (70kg/cm²) ,
WATER MEDIUM TEMPERATURE: 1°C~49°C,
NOT APPLICABLE TO CORROSIVE LIQUID;

ITEM	DESCRIPTION	DRAWING NO.	QTY	MATERIAL	COMPUTER CODE
22	STRAP PROTECTIVE JACKET	22300-09	1	SOFT PVC	10189
21	ADHESIVE LABEL	40476	1	ADHESIVE LABEL	40476
20	POLYURETHANE	22300-05	2	POLYURETHANE	10140
19	STRAP NUT	22300-06	2	STRAP NUT	20141
18	STRAP	22300-07	4	STRAP	20124
17	STRAP SCREW	11544	4	M8*50, GRADE 8.8	20128
16	MPV SEAL	22300-06	2	EPDM 512	10178
15	ADAPTOR	22100-12	2	ABS CHIMEI 757K	10127
14	PERMEATE PIPE SEAL	22100-11	2	EPDM 512	10187
13	PERMEATE PIPE	21100-02	2	ABS	10194
12	BIG RETAINING RING	22300-04	2	EPDM 512	10177
11	THREE TURN LOCKING RING	22100-09	2	SA-213 - 316L	20070
10	PERMEATE RETAINING RING	22100-10	2	A580 - 316	20077
9	BIG RETAINING RING	22100-07	2	A580 - 316	20026
8	BEARING PLATE	21100-06	2	6061-T651 - SB-211	20063
7	SEALING END PLATE	21100-04	2	ABS	10196
6	STOP PIN	23300-33	2	304	20106
5	SIDE PORT	21100-09	2	DUPLEX STEEL	20167
4	SIDE PORT SEAL	21100-15	2	EPDM 512	10180
3	4\"/>				

SHELL Length Code	L Inch (mm)	P Standard Inch (mm)	S Span Inch (mm)	EMPTY WEIGHT lb (kg)
1	56.4 (1433)	42 (1067)	28*1 (711)	27 (12)
2	96.4 (2449)	82 (2083)	56*1 (1422)	37 (16.5)
3	136.4 (3465)	122 (3099)	80*1 (2032)	48 (21.1)
4	176.4 (4481)	162 (4115)	64*2 (1626)	58 (25.6)
5	216.4 (5497)	202 (5131)	78*2 (1981)	68 (30.3)
6	256.4 (6513)	242 (6147)	92.2 (2337)	78 (34.7)

REFERENTIAL PLASTIC SHRINKAGE (IF NECESSARY):		IF THERE IS NO ADDITIONAL REMARK IN THE DRAWING, DRAFT ANGLE=0.5°	
SIGNATURE		TOLERANCE: X±1, X.X±0.1, X.XX±0.05, ANGULAR DIFFERENCE: ±0.1°	
DESIGN	DATE	MATERIAL	MODEL WAVE-1000P-4
INSPECTION		SCALE	1:4
APPROVAL		QUANTITY	SMOOTHNESS
THIS PRODUCT DRAWING CAN NOT BE COPIED AND/OR USED WITHOUT PRIOR WRITTEN APPROVAL OF WAVE CYBER.		PROJECTION	1000 PSI MEMBRANE HOUSING
		COMPUTER CODE	DRAWING NO. 21100-00
		VERSION	NO. 2
		UNIT: MM	TOTAL PAGE: 1

00-001.12

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PV WAVE 8" END PORT

PV WAVE 8" 300 PSI - End Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE300E8H1BL	PV 8" 300 PSI End Port	8040	1	1"1/2	D32	
WAVE300E8H2BL	PV 8" 300 PSI End Port	8080	2	1"1/2	D32	
WAVE300E8H3BL	PV 8" 300 PSI End Port	80120	3	1"1/2	D32	
WAVE300E8H4BL	PV 8" 300 PSI End Port	80160	4	1"1/2	D32	
WAVE300E8H5BL	PV 8" 300 PSI End Port	80200	5	1"1/2	D32	
WAVE300E8H6BL	PV 8" 300 PSI End Port	80240	6	1"1/2	D32	
WAVE300E8H7BL	PV 8" 300 PSI End Port	80280	7	1"1/2	D32	

PV WAVE 8" 450 PSI - End Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE450E8H1BL	PV 8" 450 PSI End Port	8040	1	1"1/2	D32	
WAVE450E8H2BL	PV 8" 450 PSI End Port	8080	2	1"1/2	D32	
WAVE450E8H3BL	PV 8" 450 PSI End Port	80120	3	1"1/2	D32	
WAVE450E8H4BL	PV 8" 450 PSI End Port	80160	4	1"1/2	D32	
WAVE450E8H5BL	PV 8" 450 PSI End Port	80200	5	1"1/2	D32	
WAVE450E8H6BL	PV 8" 450 PSI End Port	80240	6	1"1/2	D32	
WAVE450E8H7BL	PV 8" 450 PSI End Port	80280	7	1"1/2	D32	

PV WAVE 8" 600 PSI - End Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE600E8H1BL	PV 8" 600 PSI End Port	8040	1	1"1/2	D32	
WAVE600E8H2BL	PV 8" 600 PSI End Port	8080	2	1"1/2	D32	
WAVE600E8H3BL	PV 8" 600 PSI End Port	80120	3	1"1/2	D32	
WAVE600E8H4BL	PV 8" 600 PSI End Port	80160	4	1"1/2	D32	
WAVE600E8H5BL	PV 8" 600 PSI End Port	80200	5	1"1/2	D32	
WAVE600E8H6BL	PV 8" 600 PSI End Port	80240	6	1"1/2	D32	
WAVE600E8H7BL	PV 8" 600 PSI End Port	80280	7	1"1/2	D32	

PV WAVE 8" 1000 PSI - End Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE1000E8H1BL	PV 8" 1000 PSI End Port	8040	1	1"1/2	D32	
WAVE1000E8H2BL	PV 8" 1000 PSI End Port	8080	2	1"1/2	D32	
WAVE1000E8H3BL	PV 8" 1000 PSI End Port	80120	3	1"1/2	D32	
WAVE1000E8H4BL	PV 8" 1000 PSI End Port	80160	4	1"1/2	D32	
WAVE1000E8H5BL	PV 8" 1000 PSI End Port	80200	5	1"1/2	D32	
WAVE1000E8H6BL	PV 8" 1000 PSI End Port	80240	6	1"1/2	D32	
WAVE1000E8H7BL	PV 8" 1000 PSI End Port	80280	7	1"1/2	D32	

PV WAVE 8" 1200 PSI - End Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE1200E8H1BL	PV 8" 1200 PSI End Port	8040	1	1"1/2	D32	
WAVE1200E8H2BL	PV 8" 1200 PSI End Port	8080	2	1"1/2	D32	
WAVE1200E8H3BL	PV 8" 1200 PSI End Port	80120	3	1"1/2	D32	
WAVE1200E8H4BL	PV 8" 1200 PSI End Port	80160	4	1"1/2	D32	
WAVE1200E8H5BL	PV 8" 1200 PSI End Port	80200	5	1"1/2	D32	
WAVE1200E8H6BL	PV 8" 1200 PSI End Port	80240	6	1"1/2	D32	
WAVE1200E8H7BL	PV 8" 1200 PSI End Port	80280	7	1"1/2	D32	

PV WAVE 8" 300 PSI - Side Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE300P8H1BL	PV 8" 300 PSI Side Port	8040	1	1"1/2	D32	
WAVE300P8H2BL	PV 8" 300 PSI Side Port	8080	2	1"1/2	D32	
WAVE300P8H3BL	PV 8" 300 PSI Side Port	80120	3	1"1/2	D32	
WAVE300P8H4BL	PV 8" 300 PSI Side Port	80160	4	1"1/2	D32	
WAVE300P8H5BL	PV 8" 300 PSI Side Port	80200	5	1"1/2	D32	
WAVE300P8H6BL	PV 8" 300 PSI Side Port	80240	6	1"1/2	D32	
WAVE300P8H7BL	PV 8" 300 PSI Side Port	80280	7	1"1/2	D32	

PV WAVE 8" 450 PSI - Side Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE450P8H1BL	PV 8" 450 PSI Side Port	8040	1	1"1/2	D32	
WAVE450P8H2BL	PV 8" 450 PSI Side Port	8080	2	1"1/2	D32	
WAVE450P8H3BL	PV 8" 450 PSI Side Port	80120	3	1"1/2	D32	
WAVE450P8H4BL	PV 8" 450 PSI Side Port	80160	4	1"1/2	D32	
WAVE450P8H5BL	PV 8" 450 PSI Side Port	80200	5	1"1/2	D32	
WAVE450P8H6BL	PV 8" 450 PSI Side Port	80240	6	1"1/2	D32	
WAVE450P8H7BL	PV 8" 450 PSI Side Port	80280	7	1"1/2	D32	

PV WAVE 8" 600 PSI - Side Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE600P8H1BL	PV 8" 600 PSI Side Port	8040	1	1"1/2	D32	
WAVE600P8H2BL	PV 8" 600 PSI Side Port	8080	2	1"1/2	D32	
WAVE600P8H3BL	PV 8" 600 PSI Side Port	80120	3	1"1/2	D32	
WAVE600P8H4BL	PV 8" 600 PSI Side Port	80160	4	1"1/2	D32	
WAVE600P8H5BL	PV 8" 600 PSI Side Port	80200	5	1"1/2	D32	
WAVE600P8H6BL	PV 8" 600 PSI Side Port	80240	6	1"1/2	D32	
WAVE600P8H7BL	PV 8" 600 PSI Side Port	80280	7	1"1/2	D32	

PV WAVE 8" 1000 PSI - Side Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE1000P8H1BL	PV 8" 1000 PSI Side Port	8040	1	1"1/2	D32	
WAVE1000P8H2BL	PV 8" 1000 PSI Side Port	8080	2	1"1/2	D32	
WAVE1000P8H3BL	PV 8" 1000 PSI Side Port	80120	3	1"1/2	D32	
WAVE1000P8H4BL	PV 8" 1000 PSI Side Port	80160	4	1"1/2	D32	
WAVE1000P8H5BL	PV 8" 1000 PSI Side Port	80200	5	1"1/2	D32	
WAVE1000P8H6BL	PV 8" 1000 PSI Side Port	80240	6	1"1/2	D32	
WAVE1000P8H7BL	PV 8" 1000 PSI Side Port	80280	7	1"1/2	D32	

PV WAVE 8" 1200 PSI - Side Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE1200P8H1BL	PV 8" 1200 PSI Side Port	8040	1	1"1/2	D32	
WAVE1200P8H2BL	PV 8" 1200 PSI End Port	8080	2	1"1/2	D32	
WAVE1200P8H3BL	PV 8" 1200 PSI End Port	80120	3	1"1/2	D32	
WAVE1200P8H4BL	PV 8" 1200 PSI End Port	80160	4	1"1/2	D32	
WAVE1200P8H5BL	PV 8" 1200 PSI End Port	80200	5	1"1/2	D32	
WAVE1200P8H6BL	PV 8" 1200 PSI End Port	80240	6	1"1/2	D32	
WAVE1200P8H7BL	PV 8" 1200 PSI End Port	80280	7	1"1/2	D32	

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PV WAVE 8" MULTI PORT

PV WAVE 8" 300 PSI - Multi Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE300M8H1BL	PV 8" 300 PSI Multi Port	8040	1	1"1/2	D32	
WAVE300M8H2BL	PV 8" 300 PSI Multi Port	8080	2	1"1/2	D32	
WAVE300M8H3BL	PV 8" 300 PSI Multi Port	80120	3	1"1/2	D32	
WAVE300M8H4BL	PV 8" 300 PSI Multi Port	80160	4	1"1/2	D32	
WAVE300M8H5BL	PV 8" 300 PSI Multi Port	80200	5	1"1/2	D32	
WAVE300M8H6BL	PV 8" 300 PSI Multi Port	80240	6	1"1/2	D32	
WAVE300M8H7BL	PV 8" 300 PSI Multi Port	80280	7	1"1/2	D32	

PV WAVE 8" 450 PSI - Multi Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE450M8H1BL	PV 8" 450 PSI Multi Port	8040	1	1"1/2	D32	
WAVE450M8H2BL	PV 8" 450 PSI Multi Port	8080	2	1"1/2	D32	
WAVE450M8H3BL	PV 8" 450 PSI Multi Port	80120	3	1"1/2	D32	
WAVE450M8H4BL	PV 8" 450 PSI Multi Port	80160	4	1"1/2	D32	
WAVE450M8H5BL	PV 8" 450 PSI Multi Port	80200	5	1"1/2	D32	
WAVE450M8H6BL	PV 8" 450 PSI Multi Port	80240	6	1"1/2	D32	
WAVE450M8H7BL	PV 8" 450 PSI Multi Port	80280	7	1"1/2	D32	

PV WAVE 8" 600 PSI - Multi Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE600M8H1BL	PV 8" 600 PSI Multi Port	8040	1	1"1/2	D32	
WAVE600M8H2BL	PV 8" 600 PSI Multi Port	8080	2	1"1/2	D32	
WAVE600M8H3BL	PV 8" 600 PSI Multi Port	80120	3	1"1/2	D32	
WAVE600M8H4BL	PV 8" 600 PSI Multi Port	80160	4	1"1/2	D32	
WAVE600M8H5BL	PV 8" 600 PSI Multi Port	80200	5	1"1/2	D32	
WAVE600M8H6BL	PV 8" 600 PSI Multi Port	80240	6	1"1/2	D32	
WAVE600M8H7BL	PV 8" 600 PSI Multi Port	80280	7	1"1/2	D32	

PV WAVE 8" 1000 PSI - Multi Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE1000M8H1BL	PV 8" 1000 PSI Multi Port	8040	1	1"1/2	D32	
WAVE1000M8H2BL	PV 8" 1000 PSI Multi Port	8080	2	1"1/2	D32	
WAVE1000M8H3BL	PV 8" 1000 PSI Multi Port	80120	3	1"1/2	D32	
WAVE1000M8H4BL	PV 8" 1000 PSI Multi Port	80160	4	1"1/2	D32	
WAVE1000M8H5BL	PV 8" 1000 PSI Multi Port	80200	5	1"1/2	D32	
WAVE1000M8H6BL	PV 8" 1000 PSI Multi Port	80240	6	1"1/2	D32	
WAVE1000M8H7BL	PV 8" 1000 PSI Multi Port	80280	7	1"1/2	D32	

PV WAVE 8" 1200 PSI - Multi Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Victualic	Permeate	
WAVE1200M8H1BL	PV 8" 1200 PSI Multi Port	8040	1	1"1/2	D32	
WAVE1200M8H2BL	PV 8" 1200 PSI Multi Port	8080	2	1"1/2	D32	
WAVE1200M8H3BL	PV 8" 1200 PSI Multi Port	80120	3	1"1/2	D32	
WAVE1200M8H4BL	PV 8" 1200 PSI Multi Port	80160	4	1"1/2	D32	
WAVE1200M8H5BL	PV 8" 1200 PSI Multi Port	80200	5	1"1/2	D32	
WAVE1200M8H6BL	PV 8" 1200 PSI Multi Port	80240	6	1"1/2	D32	
WAVE1200M8H7BL	PV 8" 1200 PSI Multi Port	80280	7	1"1/2	D32	

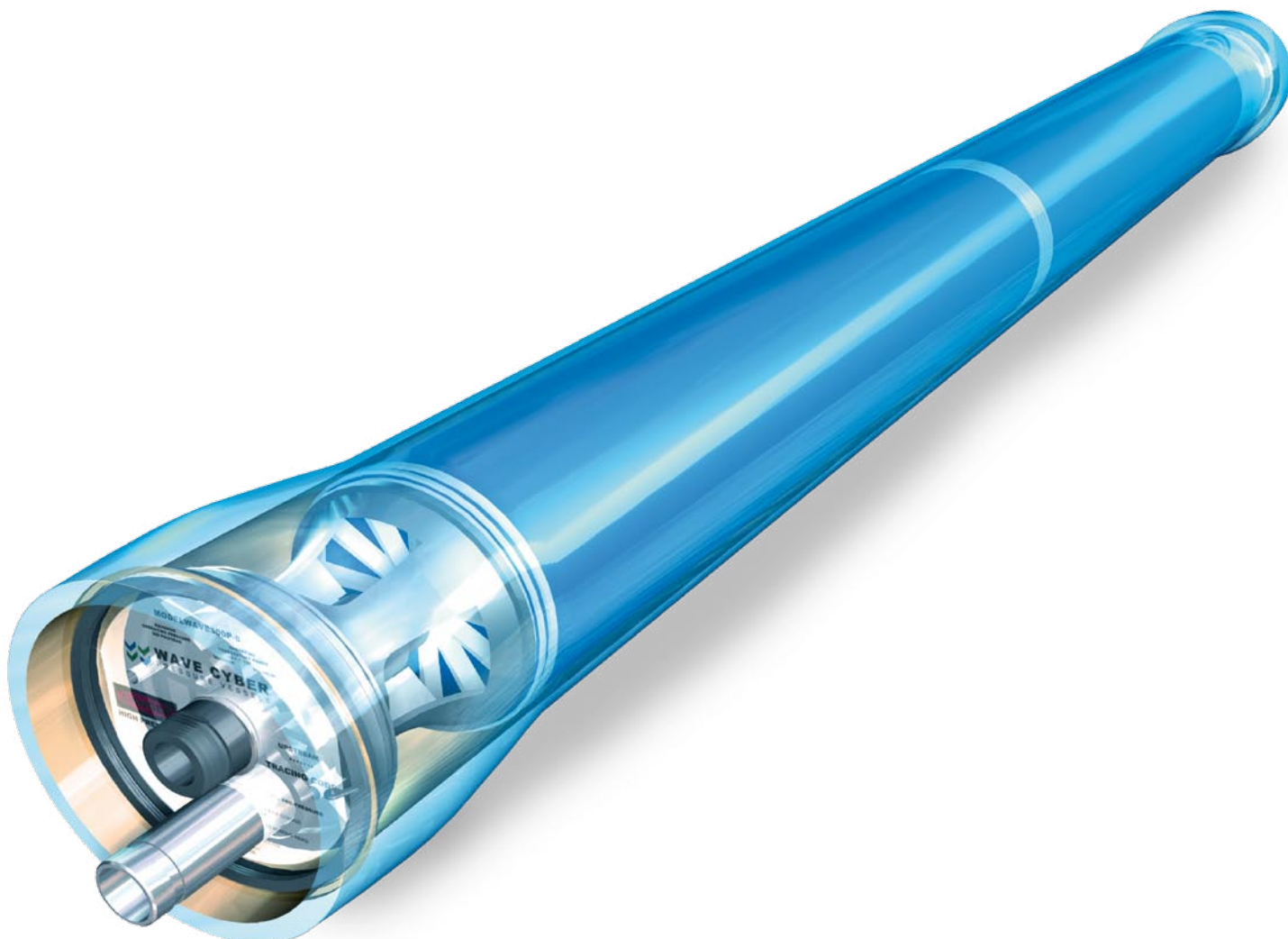
CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

MATERIALE COMPRESO AD OGNI FORNITURA

- Corpo contenitore per membrane (pressure vessel) completo di n. 2 tappi di chiusura.
 - N. 1 adattatore permeato aperto tappo/membrana (permeate adaptor)
 - N. 1 adattatore permeato chiuso tappo/membrana (permeate adaptor)
 - N. 2 selle di supporto complete di tiranti per contenitori per membrane da 1 a 4 elementi
- oppure
- N. 3 selle di supporto e n. 2 tiranti per contenitori per membrane da 5 e 7 elementi

Scope of supply

- Pressure vessel body complete with n. 2 end plug.
 - N. 1 permeate adaptor open
 - N. 1 permeate adaptor close
- or
- N. 2 saddles and straps for pressure vessels from 1 to 4 element
 - N. 3 saddles and straps for pressure vessels from 5 to 7 element



CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PV WAVE 4" END PORT

PV WAVE 4" 300 PSI - End Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out	Permeate	
WAVE300E4DR1BL	PV 4" 300 PSI End Port	4040	1	3/4" F	1/2"F	
WAVE300E4DR2BL	PV 4" 300 PSI End Port	4080	2	3/4" F	1/2"F	
WAVE300E4DR3BL	PV 4" 300 PSI End Port	40120	3	3/4" F	1/2"F	
WAVE300E4DR4BL	PV 4" 300 PSI End Port	40160	4	3/4" F	1/2"F	
WAVE300E4DR5BL	PV 4" 300 PSI End Port	40200	5	3/4" F	1/2"F	
WAVE300E4DR6BL	PV 4" 300 PSI End Port	40240	6	3/4" F	1/2"F	

PV WAVE 4" 450 PSI - End Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out	Permeate	
WAVE450E4DR1BL	PV 4" 450 PSI End Port	4040	1	3/4" F	1/2"F	
WAVE450E4DR2BL	PV 4" 450 PSI End Port	4080	2	3/4" F	1/2"F	
WAVE450E4DR3BL	PV 4" 450 PSI End Port	40120	3	3/4" F	1/2"F	
WAVE450E4DR4BL	PV 4" 450 PSI End Port	40160	4	3/4" F	1/2"F	
WAVE450E4DR5BL	PV 4" 450 PSI End Port	40200	5	3/4" F	1/2"F	
WAVE450E4DR6BL	PV 4" 450 PSI End Port	40240	6	3/4" F	1/2"F	

PV WAVE 4" 1000 PSI - End Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out	Permeate	
WAVE1000E4DR1BL	PV 4" 1000 PSI End Port	4040	1	3/4" M	1/2"M	
WAVE1000E4DR2BL	PV 4" 1000 PSI End Port	4080	2	3/4" M	1/2"M	
WAVE1000E4DR3BL	PV 4" 1000 PSI End Port	40120	3	3/4" M	1/2"M	
WAVE1000E4DR4BL	PV 4" 1000 PSI End Port	40160	4	3/4" M	1/2"M	
WAVE1000E4DR5BL	PV 4" 1000 PSI End Port	40200	5	3/4" M	1/2"M	
WAVE1000E4DR6BL	PV 4" 1000 PSI End Port	40240	6	3/4" M	1/2"M	

MATERIALE COMPRESO AD OGNI FORNITURA

- Corpo contenitore per membrane (pressure vessel) completo di n. 2 tappi di chiusura.
- N. 2 adattatori permeato aperti tappo/membrana solo per mod. 1000 psi (permeate adaptor)
- N. 2 selle di supporto complete di tiranti per contenitori per membrane da 1 a 4 elementi oppure
- N. 3 selle di supporto e n. 2 tiranti per contenitori per membrane da 5 e 7 elementi

Scope of supply

- Pressure vessel body complete with n. 2 end plug.
- N. 2 permeate adaptor open only for 1000 psi version
- N. 2 saddles and straps for pressure vessels from 1 to 4 element or
- N. 3 saddles and straps for pressure vessels from 5 to 7 element

CONTENITORI PER MEMBRANE IN VETRORESINA
Fiberglass pressure vessels for membranes

PV WAVE 4" SIDE PORT

PV WAVE 4" 300 PSI - Side Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Vitualic	Permeate	
WAVE300P41R6R1BL	PV 4" 300 PSI Side Port	4040	1	1"	1/2"F	
WAVE300P41R6R2BL	PV 4" 300 PSI Side Port	4080	2	1"	1/2"F	
WAVE300P41R6R3BL	PV 4" 300 PSI Side Port	40120	3	1"	1/2"F	
WAVE300P41R6R4BL	PV 4" 300 PSI Side Port	40160	4	1"	1/2"F	
WAVE300P41R6R5BL	PV 4" 300 PSI Side Port	40200	5	1"	1/2"F	
WAVE300P41R6R6BL	PV 4" 300 PSI Side Port	40240	6	1"	1/2"F	

PV WAVE 4" 450 PSI - Side Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Vitualic	Permeate	
WAVE450P41R6R1BL	PV 4" 450 PSI Side Port	4040	1	1"	1/2"F	
WAVE450P41R6R2BL	PV 4" 450 PSI Side Port	4080	2	1"	1/2"F	
WAVE450P41R6R3BL	PV 4" 450 PSI Side Port	40120	3	1"	1/2"F	
WAVE450P41R6R4BL	PV 4" 450 PSI Side Port	40160	4	1"	1/2"F	
WAVE450P41R6R5BL	PV 4" 450 PSI Side Port	40200	5	1"	1/2"F	
WAVE450P41R6R6BL	PV 4" 450 PSI Side Port	40240	6	1"	1/2"F	

PV WAVE 4" 1000 PSI - Side Port

Codice Code	Descrizione Description	Modello Model	N. Elementi N. element	In/Out Vitualic	Permeate	
WAVE1000P41R6R1BL	PV 4" 1000 PSI Side Port	4040	1	1"	1/2"M	
WAVE1000P41R6R2BL	PV 4" 1000 PSI Side Port	4080	2	1"	1/2"M	
WAVE1000P41R6R3BL	PV 4" 1000 PSI Side Port	40120	3	1"	1/2"M	
WAVE1000P41R6R4BL	PV 4" 1000 PSI Side Port	40160	4	1"	1/2"M	
WAVE1000P41R6R5BL	PV 4" 1000 PSI Side Port	40200	5	1"	1/2"M	
WAVE1000P41R6R6BL	PV 4" 1000 PSI Side Port	40240	6	1"	1/2"M	

MATERIALE COMPRESO AD OGNI FORNITURA

- Corpo contenitore per membrane (pressure vessel) completo di n. 2 tappi di chiusura.
- N. 2 adattatori permeato aperti tappo/membrana solo per mod. 1000 psi (permeate adaptor)
- N. 2 selle di supporto complete di tiranti per contenitori per membrane da 1 a 4 elementi
oppure
- N. 3 selle di supporto e n. 2 tiranti per contenitori per membrane da 5 e 7 elementi

Scope of supply

- Pressure vessel body complete with n. 2 end plug.
- N. 2 permeate adaptor open only for 1000 psi version
- N. 2 saddles and straps for pressure vessels from 1 to 4 element
or
- N. 3 saddles and straps for pressure vessels from 5 to 7 element



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