

Stainless Steel Membrane Housings

FACT SHEET

4-Inch Side Entry



Figure 1: Stainless Steel Membrane Housings

Veolia's combines our rugged design of stainless steel membrane element housings with 30+ years of history in the applications of RO/NF/UF machine assembly.

Mechanical Coupling Closure

Veolia 4" Side Entry 4-Port housings have a single-piece end cap held securely in place with a mechanical coupling. The Victaulic closure system seals with a single gasket fitted tightly around each end cap. The mechanical coupling eliminates the need for grooves or holes in the housing wall that can

lead to torn O-rings. This easy-to-use design allows membrane elements to be changed quickly, without any special tools.

General Properties

Features and Benefits

The 4-Port design uses four side ports in place of high-pressure interconnecting manifolding. Directly coupling the side ports to one another reduces both fabrication time and overall assembly costs. By using interstage port plugs to direct the flow, 4-Port housings deliver superior performance in any array scheme (including two-pass systems).

Why Stainless Steel

- No seals involved in side port connections
- Unlike fiberglass, doesn't warp or weep
- Is not affected by UV rays or sunlight
- Stainless steel is a preferred and universally accepted material for water systems
- Can withstand high temperatures, up to 200°F (93°C) of supporting process piping
- During assembly, stainless housings are lighter, and easier to handle than PVC, and FRP housings with equivalent pressure ratings

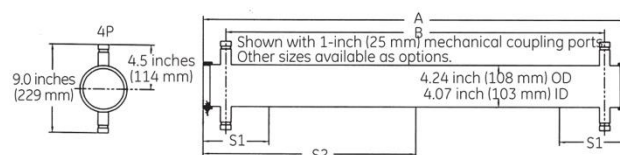
Table 1: Options Available

Item	Description
Grade	316L Stainless Steel
Side Ports	3/4", 1-1/4", and 1-1/2"-inch port Multi-port; (2 & 4 port standard) Tri-clamp (standard is Victaulic)
Finishes	Original steel mill finish (standard) Painted with acrylic polyurethane paint in most colors (i.e., bright aluminum) Electro-polished for a glossy, shiny, metallic look Mechanical polished (180 grit), inside diameter and/or outside diameter
Design Options	Low pressure made with Noryl ¹ end caps (500 psi) High pressure made with 316 stainless steel end caps (1,000 psi) Sanitary made with polished 316 stainless steel end caps

¹Noryl (trademark of SABIC)

Table 2: Materials of Construction (500 psi)

Item	Description
End Cap	316 SS or Noryl (GFN)
Victaulic Coupling	Galvanized Steel
Coupling Gasket	EPDM
Support Straps	304 SS
Mounting Pads	Rubber
O-ring	Buna-N
Housing Body	316/316L
Permeate Plug	SS Nylon



0.75-inch (13 mm) FNPT Permeate Port Standard (1–3 long)
1.25-inch (31.75 mm) Victaulic Permeate Port Standard (3–6 long)
1.5-inch (38 mm) Tri-Clamp Permeate Port Optional

Figure 2: Stainless Steel Membrane Housings

Table 3: Housing Lengths

Housing Lengths	Dimensions				Empty Weight with End Caps
	A ¹	B	S1 ²	S2 ²	
(# of Elements)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	lbs (kg)
1 – 4 x 40 ³	47.0 (1194)	43.0 (1092)	7.0 (178)	–	20 (9)
2 – 4 x 40 ³	87.1 (2212)	83.1 (2111)	15.0 (381)	–	30 (14)
3 – 4 x 40 ³	127.1 (3228)	123.1 (3127)	23.0 (584)	–	40 (18)
4 – 4 x 40	167.1 (4244)	163.1 (4143)	21.0 (533)	–	50 (23)
5 – 4 x 40	207.0 (5258)	203.0 (5156)	28.0 (711)	83.5 (2121)	60 (27)
6 – 4 x 40	247.0 (6274)	243.0 (6172)	34.0 (864)	103.5 (2629)	70 (32)

¹Add 2-inches (51 mm) to the overall length, dimension A, to include the end caps with the housing length.

²The S1 and S2 dimensions are the recommended housing support locations measured from each end of the housing. If there is no S2 dimension, then no middle support is required (i.e., use the two end supports only).

³The two-port configuration is standard. Also available in four-port configuration.

Table 4: Specifications

Specifications	402P - 500	404P - 500	402P – 500 - TC
Material	316 SS	316 SS	316 SS
Design	500 psi	500 psi	500 psi
Closure Kits	Noryl	316 SS	316 SS
Tested at	3 times design pressure	3 times design pressure	3 times design pressure
Tested Cycles	100,000 cycles at design pressure	100,000 cycles at design pressure	100,000 cycles at design pressure
Operating Temp. Mix	105°F (40.6°C)	105°F (40.6°C)	200°F (93.3°C)
Element Capacity	1 – 3 longs	2 – 6 long	2 – 6 long
Number of Ports	2	4	2
Port Size/Connection	¾" FNPT	1-¼" Victaulic	1-½" Tri-Clamp