

# > > BEL Multiple Ports Pressure Vessels

Users of BEL Multiple Port Pressure Vessels claim significant proven technological and commercial advantages:

- Cost reduction on plant construction materials, piping, labor and accessories
- Smaller footprint
- Lower long term maintenance expense
- Flexible design

Larger diameter ports allow improved flow rate from inlet to the next vessel in row.

BEL Multiple Port Vessels are available with up to 4'' diameter Side Ports.





# > > BEL Side Ports Pressure Vessels:

Unmatched composite material experience lead BEL engineers to our special product design:

- No metal inserts inside the FRP laminate the locking system is absolutely mechanical with no steel insert grooves that, in the harsh sea water environment becomes subject to corrosion and damage to the vessel body.
- Mechanical only Port-to-Vessel connection the ports are made of pipe with a special figure, flush with the vessel internal contour, no "dead-zone", no corners in the head shape. This unique port design also improves flow rate and reduces pressure drop.
- Unique End Cap design the thrust ring is a part of the End Cap and available on both sides, keeps the membranes tight all time and reduces the burnout of the O-rings.
- Large diameter product water outlet 1.5" permeate port with 30 mm internal diameter; the external threads allow higher flow of product water.

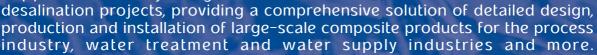


### >> PROFILE

Founded in 1966, BEL Group operates world wide production, logistic and distribution facilities supplying the needs of five continents (America, Europe, Asia, Australia and Africa) with direct and independent operations and extensive distributors' network.

BEL Group fully owns and operates three manufacturing facilities, two of them produce Pressure Vessels only, combining unique skills and resources necessary for the development, design and manufacturing of advanced composite products based on cutting-edge home grown technologies for various industries mainly chemical and food industries, waste water treatment and water supply.

Quickly becoming a global leader in the composite industry BEL is a key supplier to many mega-size



With more than 40 years of proven experience in composite materials and winding technologies, the group developed and mastered its renowned unique and innovative technologies necessary for top quality composite products manufacturing, supporting the growing needs of high performance GRP made Pressure Vessels and other tailored equipment for the water treatment and process industries.





## > > QUALITY AND RELIABILITY

### ISO 9001:2000 Certification

BEL Group Quality System strictly complies with the ISO 9001:2000 International Quality standards.

### **ASME Code Section X Certification**

BEL Group pressure vessels are designed, manufactured and tested according to the strict requirements of ASME, section X, the internationally recognized standard for composite pressure vessel construction.

ASME Code Sec. X stamped and NB (National Board) registered vessels are available upon request.

#### **CE Mark**

BEL Group pressure vessels are approved to carry the CE mark as a proof of the compliance with the European Pressure Equipment Directive P.E.D.97/23/EC.

### NSF / ANSI Standard 61

BEL Group Pressure Vessels passed all the NSF / ANSI Standard 61 testing and auditing procedures and now BEL pressure vessels are certified with NSF / ANSI Standard 61.



# THE LPC (Low Pressure Composite) model

Our long time experience proves that even high grade Stainless Steel made parts and accessories are exposed to corrosion.

Corrosion exposure coupled with market needs and

production cost reduction lead BEL to design and manufacture the new LPC model for low pressure application of up to 20 bar (300psi) and 1 to 8 membrane elements.

These unique LPC vessels (both Multiple and Side Ported) are steel free and made only from Composite Materials including the vessels ports and End Caps.



## **PRODUCT RANGE**

GRP 8" and 4" Pressure Vessels (membrane housing) for Reverse Osmosis, Nano-Filtration and Ultra-Filtration:

Multiple Side Ported vessels with 1.5", 2", 2.5" 3" & 4" diameter ports Standard 2 Side Ported vessels with 1.5", 2", 2.5" 3" & 4" diameter ports End Ported vessels with 1.5" diameter feed and concentrate ports

### Size & Pressure Rate:

8" Side Port vessel, up to 1,500 psi and 1 to 8 membrane elements 8" End Port vessel, up to 1,500 psi and 1 to 8 membrane elements 4" Side Port vessel, up to 450 psi and 1 to 6 membrane elements 4" End Port vessel, up to 1200 psi and 1 to 6 membrane elements

# Bel Vessels in Desalination Plant -Major reference:

VID / Ashkelon - 320,000 M³/Day, Sea Water RO plant H2ID / Hadera - 320,000 M³/Day, Sea Water RO plant GCDA / Gold Coast - 125,000 M³/Day, Sea Water plant VIA MARIS / Palmachim - 82,000 M³/Day, Sea Water Plant ESCOMBRERAS / Murcia - 60,000 M³/Day, Sea Water Plant LWP / Cyprus - 54,000 M³/Day, Sea Water Plant BLUE HILLS / Bahamas - 30,000 M³/Day, Sea Water Plant YUHUAN / China - 30,000 M³/Day, Sea Water Plant MA'AGAN / Israel - 27,000 M³/Day, Brackish Water plant RINCÓN DE LEÓN / Spain - 25,000 M³/Day, Brackish Water plant NORTH CAMERON / Texas - 7,500 M³/Day, Brackish Water plant

