



# EQUIPMENTS

# EQUIPMENTS FOR MEMBRANE SYSTEMS

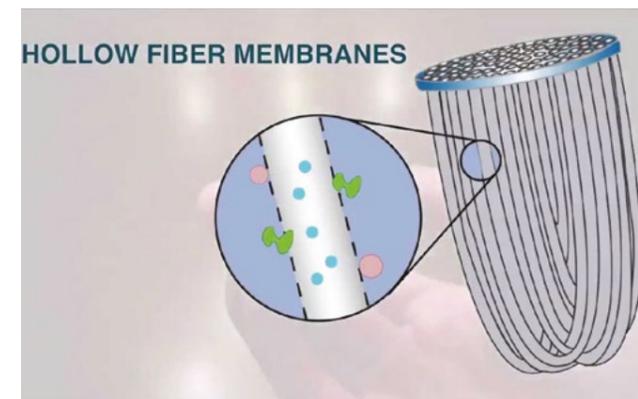
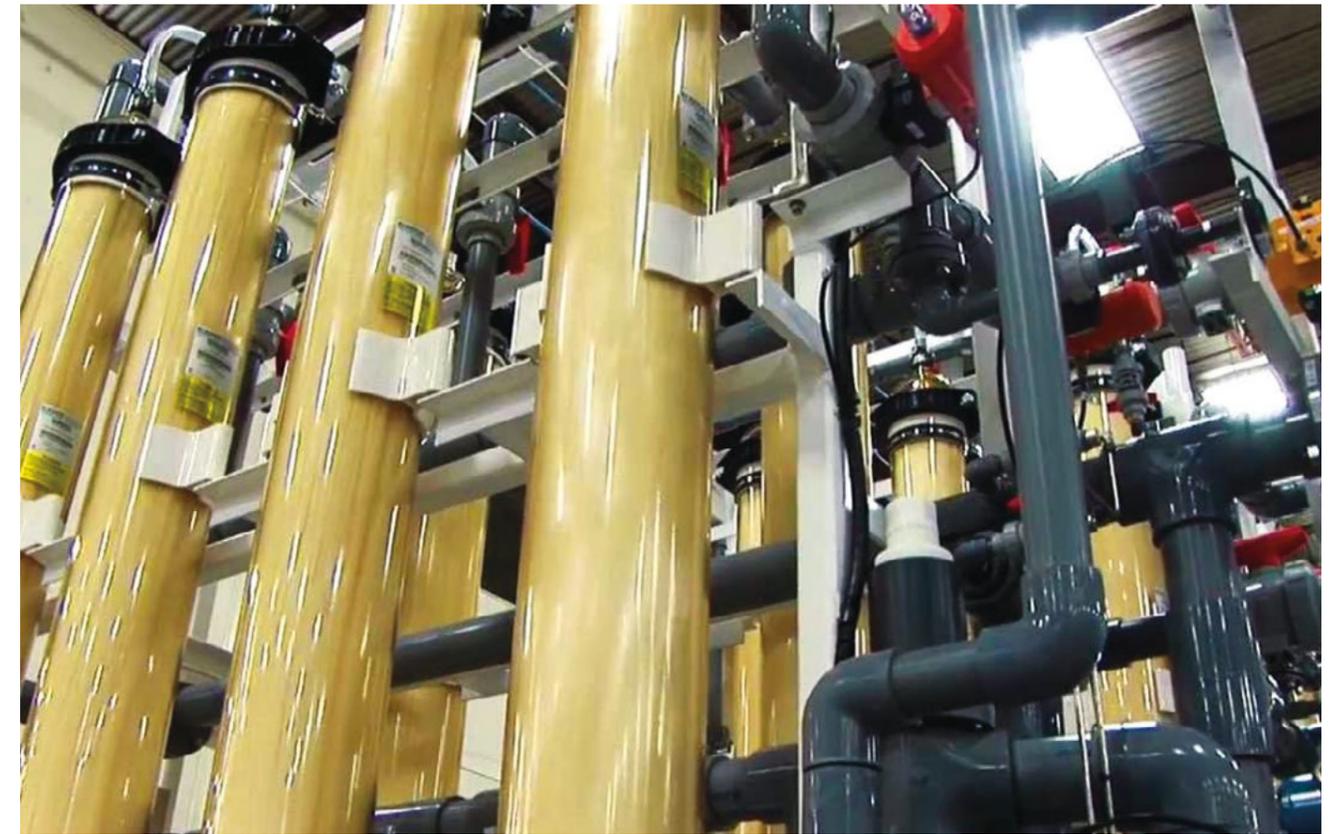
## MEMBRANES

- RO - BRACKISH WATER REVERSE OSMOSIS MEMBRANES
- RO - SEA WATER REVERSE OSMOSIS MEMBRANES
- UF - ULTRAFILTRATION MEMBRANES
- NF - NANOFILTRATION MEMBRANES
- MF - MICROFILTRATION MEMBRANES
- MBR - MEMBRAN BIOREACTOR
- TMBR – TUBULAR MEMBRANE BIOREACTOR
- CMF – CERAMIC MEMBRANES
- SSM – SANITARY SPIRAL MEMBRANES
- ECOAT MEMBRANES



# ULTRAFILTRATION (UF) MEMBRANES

UF is the separation of a material selected according to size under reduced pressure. Removal of substances in the 0.005-0.1 micron UF is provided. This 1000 to 300,000 Daltons (MWCO-molecular weight removal) means the removal of molecules in size. Selected MWCO membrane dissolved salts and low molecular weight substances while allowing the passage of high molecular weight species will be concentrated. UF membranes concentration in many industries, used for purification and filtration.



# MBR - MEMBRAN BIOREACTOR MOLDULES

ECO-MEM is a technology for ultra- and micro- filtration of wastewater of any kind, whereby organic hollow fibres with micro-pores (pore size  $< 0.2\mu\text{m}$ ) are used as filtration medium.

The hollow fibres have outside diameters between 0.3 -0.5 mm, depending on application.

In order to obtain sufficient surface area and to allow constant flux rates several hundred fibres are combined to bundles and wound up around a carrier cartridge.

The carrier cartridge has a suction connection for filtered water and an air pressure inlet connection for air scouring. The ECO-MEM cartridge protects the membranes by preventing mechanical load and also optimizes air scouring.

Several cartridges can be combined to modules, which are submerged and directly installed in the basin.

## APPLICATIONS

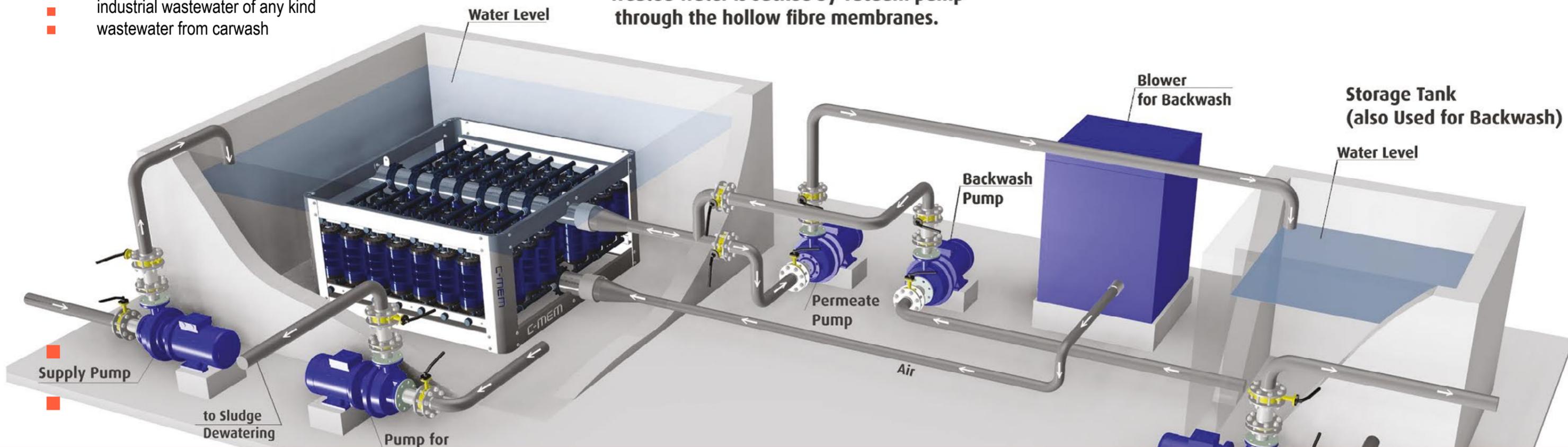
- biological wastewater treatment (MBR)
- upgrading of existing wastewater treatment plants / capacity increase
- grey water treatment
- landfill leachate treatment
- condensate treatment in biomass power plants
- industrial wastewater of any kind
- wastewater from carwash

## ADVANTAGES OF ECO-MEM

- 50 % space gain and better effluent quality compared to conventional wastewater treatment
- installation in existing basins and retrofitting possible
- very low operation costs of membrane filtration by cyclic aeration of only 15 – 30 seconds every 5 – 10 minutes
- simple and safe operation by simultaneous filtration and removal of bacteria / virus with the same equipment
- very high component density = little space requirement
- long life time of modules, cheap and easily exchangeable
- bacteria and virus are safely removed (104-107 fold reduction) and not only inactivated
- no problems in seasonally operated plants when the membranes stay dry for several months
- modular system



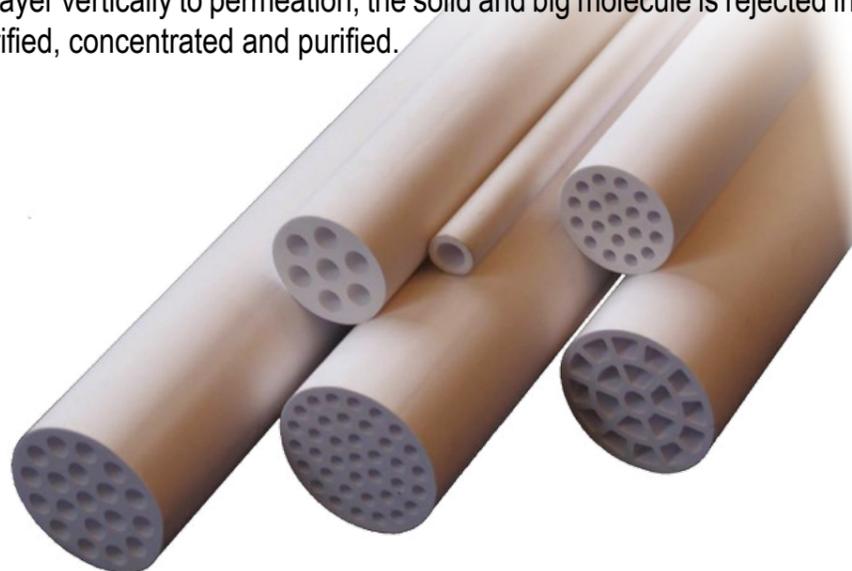
Treated water is sucked by vacuum pump through the hollow fibre membranes.



# CERAMIC MEMBRANES



Ceramic membrane is a porous fine ceramic filter which is sintered from Alumina, Titania or Zirconia under ultra high temperature. Ceramic membrane normally has an asymmetrical structure with porous support active membrane layer. The macro porous support ensures the mechanical resistance while the active layer functions separation ranging from Microfiltration, Ultrafiltration and even Nanofiltration (from 10nm down to 1KD). Ceramic Membrane always runs at a CROSS FLOW FILTRATION mode. The turbid fluid goes through membrane layer inside the single channel or a multichannel at a high velocity. Driven by TransMembrane Pressure(TMP), the clean liquid with micro-molecule pass through the membrane layer vertically to permeation, the solid and big molecule is rejected in retentate. The feed fluid is thus clarified, concentrated and purified.



## CERAMIC MEMBRANE ADVANTAGES:

- Acid/alkaline/oxidation chemicals resistance
- Solvent stability
- High thermal stability and steam disinfected
- Wearability and excellent strength
- Narrow pore size distribution
- Easy to be cleaned and regenerated



# FILTRAN MEMBRANE VESSELS

They are used as container to membranes at 4" and 8" diameter as to the desired flow rate. They are produced from stainless steel or FRP material. They have pressure rate from 300psi to 1200psi.



# FILTRAN CARTRIDGE FILTERS AND HOUSINGS

Cartridge filter systems consist of cartridge and filter body maintaining water treatment. Filter bodies can be made up of stainless steel, carbon steel or polypropylene materials.

Cartridges used in here have different micron preciseness. Therefore, with cartridges at suitable preciseness, number and specifications for varying capacities, precise filtration can be carried out at micro level. Characteristic of water and utilization period of filters are the factors that affect the contamination periods of cartridge. Contaminated cartridges increase the pressure loss of filter, decrease the filtration preciseness.

Cartridges options from 0.1  $\mu$  to 100  $\mu$  and 10-70" length are available.



# SELECTO NANOSMART

- Meets NSF / ANSI standards 42 & 53
- Easy modular assembly (no tools needed)
- Easy installation drives down costs
- Easy to replace modules
- Modular platform can be customized for different applications
- Sanitary Quick Change designed encased cartridges for easy cartridge replacement with 1/8 turn with no hands touching the filter element



MADE IN THE USA



selecto  
SCIENTIFIC

Selecto's NanoSMART® Filtration is the most advanced Technology for Sediment, Taste, Odor, Chlorine, Chloramine, Scale Control, and Bacteria Removal with Higher Capacity, and High Flow Rate with Small Pressure Drop.

## APPLICATIONS:

Ingredient Water for Hot Beverages (Coffee, Tea, Espresso, etc.).  
Cold Beverages (Fountain, Iced Tea, etc.), Ice Machines, etc.

## FEATURES AND BENEFITS:

- Patented Hollow Carbon/Nano Metal Oxide Technology
- High flow rates with minimal pressure drops
- Excellent organic matter reduction
- High capacity sediment and dirt removal without a prefilter
- High capacity chlorine and chloramines reduction
- Unpleasant taste and odor reduction
- Heterotropic Bacteria, Live Cyst and Turbidity reduction
- Scale Control without addition of polyphosphate
- Does not swell in high TOC (Total Organic Compound)
- Filtered water taste like most of other carbon filters



# BIGBUBBA

## RUGGED CONSTRUCTION

Big-Bubba filter housings are made of rugged, glass-reinforced polypropylene so they will not chip, rust or dent. And because all wetted surfaces are non-metallic, they are ideal when chemical compatibility is an issue and for sea water applications.

## APPLICATIONS

Big-Bubba filters are ideal for a wide range of applications, including:

- Commercial filtration
- Industrial filtration
- Pre-filtration for reverse osmosis equipment
- Community water systems
- Sea water applications due to their non-corrosive construction
- Replacement for bag filters for more filter area
- Replacement for multiple cartridge filters for greater convenience
- Water for livestock & poultry
- Whole house filtration low cost

Big-Bubba filters are an economical replacement for stainless steel filtration equipment because of their non-metallic construction and today's high cost of stainless steel!



# BIG BUBBA

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## FILTERS

## E-Z CHANGE-OUT

Cartridge replacement is easy as 1-2-3:

1. Remove swing bolts.
2. Remove lid.
3. Rotate cartridge ¼ turn and pull-up.



**DOSING PUMP**



**PH-ORP METERS**



**CONDUCTIVITY METER**



**FLOWMETERS**



# EQUIPMENTS



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