

APPLICATIONS

WATER TREATMENT
WASTEWATER TREATMENT
INDUSTRIAL
LEACHATE & MINING
MUNICIPAL



CD Membrane Modules

for purification of highly contaminated water

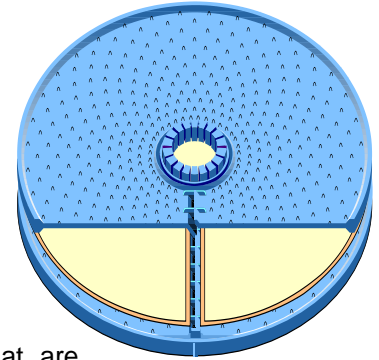


The unique Circular Disc membranes empower you to dramatically reduce the volumes of wastewater that you discharge and therefore significantly reduce your Environmental Impact and Operating Costs.

Since the 1980s, a wide range of membrane types have been developed and used for treatment of wastewater. However, the development of CD membranes marked a major breakthrough in both the degree of concentration achievable and, very importantly, overall operating costs.

What are Circular Disc Membranes?

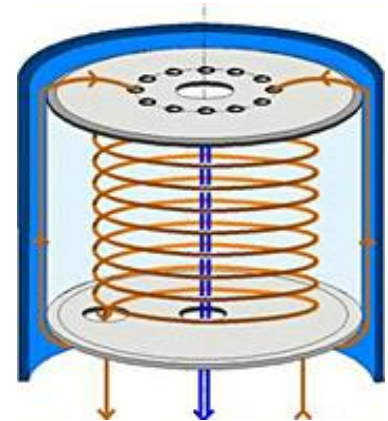
CD Membranes are optimised plate and frame membrane systems that can handle a much higher SDI (Silt Density Index) than other membrane filtration systems. Putting it simply, they can handle far higher solids loads than membrane conventional systems, which is a huge advantage when dealing with “dirty” water. Consequently, CD modules now have a leading position amongst plate and frame membrane technologies.



CD membranes use circular discs of a range of membrane types that are mounted in between circular plastic discs and enable the separation of dissolved salts etc. present in wastewater streams. There are a number of different designs of such membranes available, but CD membranes are unique in a number of ways that have a significant impact the amount of water you can treat and then recycle and also on the system operating cost.

CD membranes:

- create a circular flow across each membrane surface. The permeate passes to a common central channel while the concentrate flow eventually passes to the next membrane in the stack, and so on
- can be used at pressures up to 140 bar, so you can recover and recycle a very high percentage of the wastewater you produce
- are largely self-cleaning, giving the membranes a long and efficient service life
- have a modular layout, making later expansion of the system very easy if you need to increase the volume you treat
- have a very low pressure drop across the membranes, so that operating costs are far lower than competitive systems. Typically power savings can be 5 – 8kWh per m³ of liquid pumped!!
- can be used for a very wide range of applications and are particularly well-suited to separation of contaminants in particularly challenging applications such as landfill leachate, producing high-quality permeate for discharge.



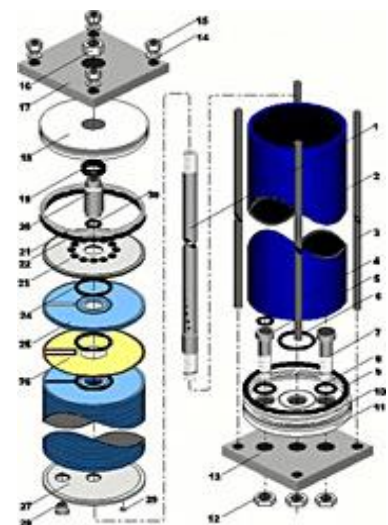
Concentrate Permeate Feed

CD-9 modules

CD membranes are installed in vertical packs inside a cylindrical pressure vessel. Each of these vessels has a total membrane area of 9m² and so each of these is a CD-9 module.

You can see how the CD modules are arranged in this “exploded” view.

Due to the unique design of the CD membranes, the pressure drop across each standard CD-9 module is only about 2 bar. This means that, when using 5 x CD-9 modules in series, which is a common arrangement, the total pressure drop will only be about 10 bar.



This is far lower than other designs, and means that your operating costs will be much lower!

Applications for CD-9 Modules

CD-9 modules are used in a wide range of applications across many business sectors and for a huge range of flow rates. Just a few of these applications are listed below:

- Minimising losses for surface & potable water treatment
- Treatment and re-use of leachate from landfills and mines
- Effluent Treatment for textile production and dyeing
- Brackish water and seawater desalination
- Pickling and Oily waste treatment in metals industries
- Tannery effluent treatment and recycling
- Deionisation plant wastewater recovery and recycling
- Metal production and finishing industries
- Hazardous chemical wastewater recycling
- Zero Liquid Discharge (ZLD) systems
- Minimum Liquid Discharge (MLD) systems



Containerised system with CD-9 modules

Contact us: The list above really is just a few of the applications we can handle; if you are not sure, please just contact us to find out more and we will be very happy to discuss your specific needs.

Key Focus

When ZLD or MLD systems are required to minimise or eliminate liquid discharge, using the CD-9 modules provide a huge advantage the final either evaporation or crystallisation stage. The hugely reduced volumes produced by CD-9 modules with far less pressure loss than with other designs dramatically reduces both Capital and Operating costs for that final treatment stage.

About H+E

H+E is part of the Aquarion Group of companies, specialising in the design and supply of both products and complete systems for the treatment of water and wastewater across a wide range of industries and applications.

H+E has been providing solutions to its clients across the world for over 100 years and therefore has a very long list of past clients, many of which we have supplied a number of plants to as they expanded.

H+E will supply a system designed to meet your specific needs. You may need a CD-module system to minimise the volume of water you discharge with your existing plant, or perhaps you need a completely new plant; whichever it is, we will be very pleased to talk to you.

In addition, if you wish, we will provide Technical Support, regular service visits and the occasional spare part for the operating lifetime of your system. We will provide this service on a basis that suits you.

Technical Datasheet

Parameter	Value
Flow direction	Out-to-in
Membrane manufacturer	DOW Filmtec
Membrane type (RO applications)	BW30LE or SW30ULE
Membrane material	PA
Cushions per module	115
Disc plate material	Proprietary
Casing material	FRP, PVC, coated SS 1.0577 and SS 1.4571
Membrane area	9.0 m ²
Packing density	94.5 m ² /m ³
Feed flow channel width	2.5 mm
Feed flow velocity	0.5 m/s
Feed flow length	50 m
Feed flow Reynolds number	2,700
Nominal NaCl rejection rate	99.2 ÷ 99.6%
Nominal feed flow	750 - 900 l/h
Maximum feed flow	1,200 l/h
Operating temperature range	5 ÷ 40°C
Maximum cleaning temperature	45°C
Maximum operating pressure	140 bar
Pressure drop per module	1.9 bar
Unit pressure drop	0.21 bar/m ²
Operating pH range	4 - 11
Cleaning pH range	2 - 13
Maximum inlet SDI	15
Length	1,170 mm
Maximum external diameter	322 mm
Weight (empty)	120 kg
Weight (full)	150 kg
Feed connection	G1/2"
Permeate connection	G1/4"
Concentrate connection	G1/2"

H+E ranks among the world's leading suppliers in the fields of: water & wastewater treatment, and energy efficiency. Based on its global presence, the **H+E GROUP** has completed projects in over 50 countries.



Tel: +44 1403 272772

sales@he-water.co.uk
www.he-water.co.uk