

CD 9 -Module

The **CD 9 -module** is a further development of the disk module technology. The patented flow design of the module offers several advantages:

- high ratio between membrane surface to module volume (183 m²/m³)
- optimised fluid characteristics and hydraulics
- only low pressure loss over the module
- excellent cleaning behaviour
- wide range of application

Membrane Filtration

- Nanofiltration
- Reverse Osmosis

for the Applications

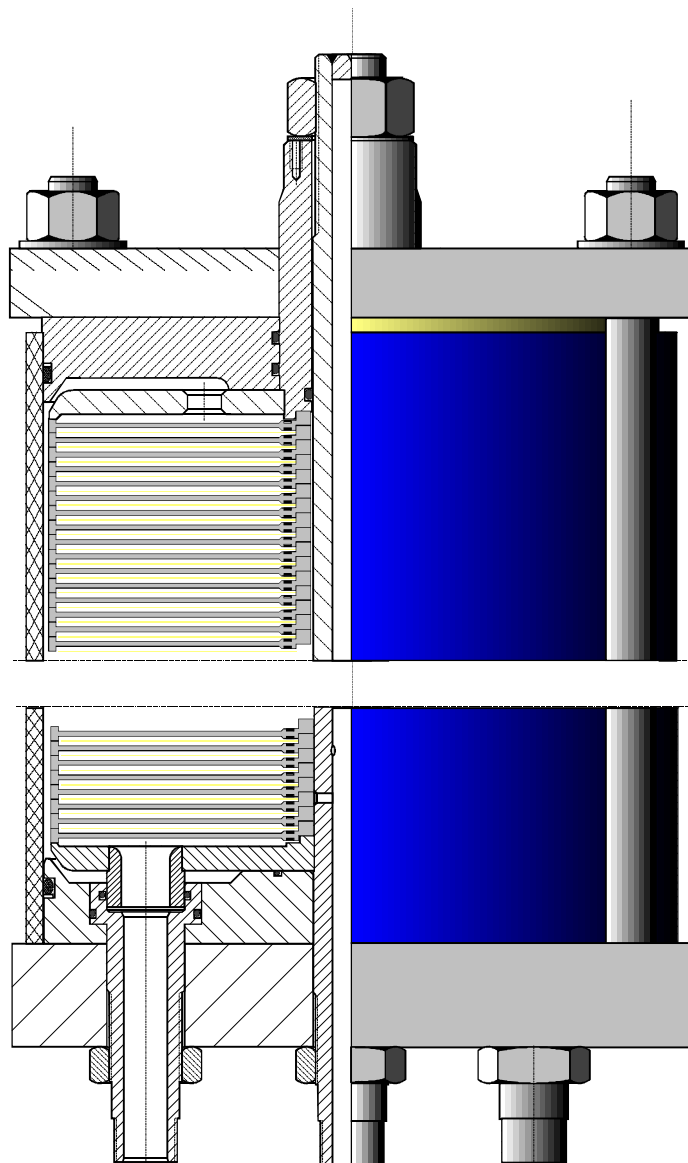
- sea- and brackishwater desalination
- process water preparation

Product Applications

- product recycling
- product concentrating

Waste Water treatment

- oil-water-emulsions
- laundry water treatment
- water recycling
- leachate water treatment
- condensate treatment



Technical Specifications of the CD-Module 9 m²

Operation Pressure:

middle pressure stage	70 bar (1015 PSI)
high pressure stage	140 bar (2030 PSI)

Dimensions:

Diameter:	10" \cong 254 mm - 0,83 ft
End flanges	280 x 280 mm - 0,92 x 0,92 ft
Height Pressure Vessel	915 mm - 3 ft
Height total	1.110 mm - 3,64 ft
Membrane Surface	9 m ² - 97 sq ft
No. Membrane Cushions	113

Membrane Material:

It is possible to use any standard membrane provided it can be thermally welded.

Connecting Lines:

raw water:	R $\frac{3}{4}$ "
concentrate:	R $\frac{3}{4}$ "
permeate:	R $\frac{3}{4}$ "

Flow Rates:

nominal	750 l/h
minimal	500 l/h
maximum	900 l/h

Connecting Sets (scope of delivery):

- Two Pressure Connecting Tubes; 800mm length; PN 160 (max. 2320 PSI)
- Permeate Tube; 800 mm length; PN 10 (max. 145 PSI)

Spare Membrane Cushion

The membrane cushions can easily be exchanged, spare membrane cushions are available single or as a complete set.

Weighth	77 kg unfilled
	118 kg filled

The support plate supports the membrane cushion and keeps the flow space free. The surface of the support plate consists of flow segments mixing the waste water (rinsing the turbulent current resp.) on the one side and on the other side providing through their geometrical arrangement for an uniform current across the full area of the membrane cushion. O-rings pack the permeate against the raw water at the hole in the middle, at the top and bottom side of the support plate.

The support plates and the 113 membrane cushions are stacked alternately into a packet. The support plates are protected against the current by flat stainless stack end plates. They collect the pretension resulting from tightening the nuts on the central bolt and distribute them equally to the edge of the support plates, and the o-ring packing system in the centre receives the necessary pre-tension. The whole stack is designed in a way that it is mounted on a pre-assembled foot flange. All connections are installed in advance.

The inside of the middle bolt is bored and serves as a permeate discharge canal. The permeate produced in the membrane cushion that is being discharged through the spacers reaches through bore holes to the central bore hole in the central bolt. At the same time the central bolt centres the support plates.

list of items CD -module			
type 1: 70 bar, 9 m ² membrane surface			
pos.	specification	amount	material
1	central bolt	1	stainless steel
2	pressure vessel 70 bar, 915 mm	1	GFK
3	threaded bolt M 20 x 1.010	4	stainless steel
4	O-ring no. 124	1	EPDM
5	concentrate sleeve R 3/4"	1	stainless steel
6	O-ring no. 228	1	EPDM
7	feed sleeve R 3/4"	1	stainless steel
8	O-ring No. 131	2	EPDM
9	quad-ring Nr. 4375	1	EPDM
10	supporting ring	1	PTFE
11	flow diverter disc below	1	POM
12	nut M 30 x 2, DIN 439	3	stainless steel
13	endflange below	1	St 52-3
14	washer A 21, DIN 125	4	stainless steel
15	nut M 20, DIN 934	4	stainless steel
16	nut M 30 x 2, DIN 934	1	stainless steel
17	endflange above	1	St 52-3, verzinkt
18	flow diverter disc above	1	POM
19	O-ring no. 228	2	EPDM
20	clamping device	1	stainless steel
21	supporting ring	1	PTFE
22	quad-ring Nr. 4375	1	EPDM
23	stack endplate above	1	stainless steel
24	O-ring no. 100	226	EPDM
25	CD membrane support plate	113	PC
26	membrane	113	div.
27	stack endplate below	1	stainless steel
28	concentrate adapter	1	stainless steel
29	flow taper	1	stainless steel
30	O-ring no. 131	1	EPDM