



Aqua-Clear

MFP/4 - 44 ^{CE}

EQUIPMENT FOR DRINKING AND TECHNOLOGICAL WATER

Technical Information



M005-82 - Rev .02 - 01/2014

GENERAL

The capability for purifying water chemically and bacteriologically in a single operation is the unique feature of Reverse Osmosis, which allows a salt removal of 90%-95% (depending on the nature of the salts concerned). What's more, the osmotic membranes reject bacteria, viruses and pyrogens, preventing them from passing into the purified water produced. This continuous, physical process does not involve the use of regenerating agents. Electricity consumption is low. The operation of Reverse Osmosis systems does not require specialist staff, and nor are complicated control systems necessary.

Culligan Reverse Osmosis devices are the best, most modern systems on the market today.

They can easily be inserted in a complete pre- and post-treatment system for the most demanding uses.

CONSTRUCTION FEATURES

Culligan Aqua-Clear MFP/4-44 Series models are designed and built to the highest quality, safety and noise reduction standards.

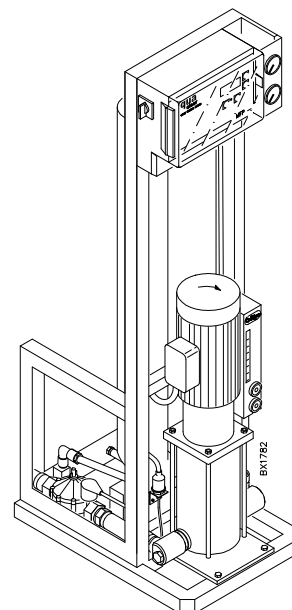
The construction materials used, especially those of the parts in contact with the water, all have proven resistance to corrosion and do not trigger shedding phenomena.

CONTROL AND MONITORING - All the electrical components, contained in an airtight protective casing (IP 55), meet the most widely adopted European Standards. The three-phase motor (IP 55 class F), of rugged construction, is compliant with current safety requirements. The electronic control unit, complete with control/monitoring display, receives

and displays all informative and alarm data. What's more, the display can be used to show other data useful for correct operation of the system, such as: product and inlet water conductivity, saline removal rate, product and rejection water flow rate, system recovery ratio.

FLEXIBILITY - Operation of all Culligan Aqua-Clear MFP/4-44 Series models is extremely flexible. With nominal temperature of 20°C, at system start-up the recovery ratio between product water and inlet water may be set from 40% to 75% depending on the data of the technical specifications shown in the table. The same recovery ratios may also be retained at different temperatures.

FLUSHING AND DISINFECTION - All Culligan Aqua-Clear MFP/4-44 Series models are designed for easy connection to an external system for flushing and automatic disinfection of the osmotic modules.



Quality System Certified according to UNI EN ISO 9001:2008 Norm

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FEED WATER CHARACTERISTICS

Hydraulic pressure : - > 0.5 bar for operation only
 - ≥ 2 bar to guarantee rated performance
 - > of the pressure required at the user in case of pressurised distribution of product

Product pressure : 3 bar max

Temperature : 2-35°C (nominal temperature 20°C)

Maximum salinity
 mod. from 400 to 1600 : 3000 mg/l (as TDS)
 mod. from 2200 to 4000 : 1500 mg/l (as TDS)

SDI : ≤ 3

pH : 7±1

Activated Chlorine : absent (or ≤ 0.1 ppm)

Calcium Sulphate : concentration in reject water below solubility limit

Calcium Carbonate : Negative Langelier Index in reject water

Silica : concentration in reject water below solubility limit.

Note: if necessary, the turbidity values required can be achieved with suitable prefiltration.

PRODUCT CORRECTION FACTOR IN RELATION TO TEMPERATURE

Inlet water temperature	Correction factor for the temperature considered
10°C	0.63
11°C	0.67
12°C	0.71
13°C	0.74
14°C	0.77
15°C	0.81
16°C	0.86
17°C	0.89
18°C	0.93
19°C	0.96
20°C	1*
21°C	1.04
22°C	1.07
23°C	1.11
24°C	1.14
25°C	1.18
26°C	1.23
27°C	1.26
28°C	1.31
29°C	1.36
30°C	1.40

* Nominal capacity at 20°C

Note: with temperatures lower or higher than the limits set (2-35°C) there may be irreversible physical damage to the membranes (due to frost or the deterioration of the osmotic film).

TECHNICAL SPECIFICATIONS

Model MFP/4-44	Nominal Flow-Rates and Pressures		Osmotic Modules		Recovery Ratio	Connections		Instaled Power kW	Dimensions			Ship- ing Weight (-) kg
	Product (1)	Intake	Q.ty	Mod.		Water Female IN – OUT	Electrical 3-ph + earth + neutral		Width mm	Depth mm	Height mm	
	l/h	bar										
400	400	14	1	4040	40-75%	1" - 1/2"	3x380V~ 50Hz	1.5	500	660	1550	115
800	800	14	2	4040	40-75%	1" - 1/2"	3x380V~ 50Hz	1.5	500	660	1550	140
1200	1200	14	3	4040	50-75%	1" - 1/2"	3x380V~ 50Hz	2.2	500	660	1550	170
1600	1600	14	4	4040	60-75%	1" - 1/2"	3x380V~ 50Hz	2.2	500	660	1550	190
2200	2000	18	4	4040	50-75%	1" - 3/4"	3x380V~ 50Hz	4	500	660	1800	220
2800	2400	18	5	4040	60-75%	1" - 3/4"	3x380V~ 50Hz	4	500	660	1800	250
3300	2800	18	6	4040	70-75%	1" - 3/4"	3x380V~ 50Hz	4	500	660	1800	280
3600	3200	18	7	4040	70-75%	1" - 3/4"	3x380V~/50Hz	4	500	770	1800	310
4000	3600	18	9	4040	70-75%	1" - 3/4"	3x380V~/50Hz	4	500	770	1800	370

1) Average values calculated on the following conditions: water temperature 20°C; operating pressure 14 or 18 bar; recovery ratio 75%; TDS 500 ppm as NaCl; product water pressure 0 bar; new membranes.

Note.: minimum water inlet pressure: 2 bar

CAUTION: even in more favourable conditions (e.g. high temperature), in order to ensure correct operation of the system the nominal flowrates must never be exceeded. If necessary, reduce the inlet pressure.

Culligan reserves the right to change any technical or design specifications

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