

REVERSE OSMOSIS

# GAMA SERIES

Applied for water where classical purification systems become insufficient (seawater, well water with high conductivity etc.), separating all undesirable minerals from water, membrane filtration transaction devoted to pure water provision is called REVERSE OSMOSIS.



GAMA 6080



GAMA 280



GAMA 4280

## OPERATING PRINCIPLE OF REVERSE OSMOSIS SYSTEM

Reverse osmosis (RO) is a filtration method that removes many types of large molecules and ions from solutions by applying pressure to the solution on one side of a selective membrane forcing only the small water molecules through the membrane becoming purified or permeate water.

Membrane surface is always kept clean and unplugged by 'Cross Flow' operation that happens inside membrane element. By means of 'Cross Flow', while some liquids (element water) pass through membrane, some liquid (intensive water) move parallel to membrane surface, so protect others to stick to membrane. This process enables much more qualified water compared with other filtration systems.



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MODEL	CAPACITY @20C m <sup>3</sup> /hour	MAX. OPERATING PRESSURE (BAR)	MEMBRANE VESSEL QTY (pcs)	8" MEMBRANE QTY (pcs)	SYSTEM RECOVERY (%)
GAMA 180	1	12	1	1	50
GAMA 280	2	12	2	2	50
GAMA 380	3	12	1	3	60
GAMA 480	4	12	2	4	60
GAMA 680	6	12	2	6	60
GAMA 880	8	12	2	8	70
GAMA 1080	10	12	2	10	70
GAMA 1280	12	12	2	12	75
GAMA 1580	15	12	3	15	75
GAMA 1880	18	12	3	18	75
GAMA 2480	24	12	4	24	75
GAMA 3080	30	12	5	30	75
GAMA 3680	36	12	6	36	75
GAMA 4280	42	12	7	42	75
GAMA 4880	48	12	8	48	75
GAMA 6080	60	12	10	60	75
GAMA 7280	72	12	12	72	75
GAMA 9680	96	12	16	96	75

### STANDARD FEATURES

- FRP Membrane Vessels
- 8" TFC Spiral membranes
- AISI304 stainless steel vertical centrifuge high pressure pump
- Frame is AISI304 Stainless Steel or St-37 Epoxy Painted Carbon Steel
- PP housing between GAMA180 - GAMA380
- PVC cartridge filter between GAMA480 - GAMA2480
- Stainless Steel cartridge filter after GAMA3080
- U-PVC low and high pressure piping between GAMA180 - GAMA3080
- U-PVC low pressure piping between GAMA180 - GAMA3080 and AISI304 stainless steel piping between GAMA3680 - GAMA9680
- Automatic valves are electrical actuated
- Flow regulation valves at pump outlet and drain lines
- Low and high pressure switch
- Inline flow meters at product and drain water lines
- Glycerin type manometers
- Conductivity meter at product water line
- Autoflush system
- For optional automatic rinsing-CIP systems; cip pump and cip tank.
- Electronic card or PLC control panel
- ASC dosage system is not included.

### RECOMMENDED FEED WATER LIMITS

Feed water TDS : 0-2,000 ppm

Feed water pressure : 2 to 5 bar

Feed water pH range : 6-8

Silica (SiO<sub>2</sub>) tolerance : 25 ppm max.

Max. Iron (Fe) tolerance :  
0.05 ppm (without ASC dosing)  
0.2 ppm (with ASC dosing)

Min. and max. feed water temperature  
(10° C - 30° C)

Hydrogen Sulfide should be removed

Turbidity should be removed (NTU <1)

Oil-Grase should be removed

SDI < 5

Microbiological contamination should be removed