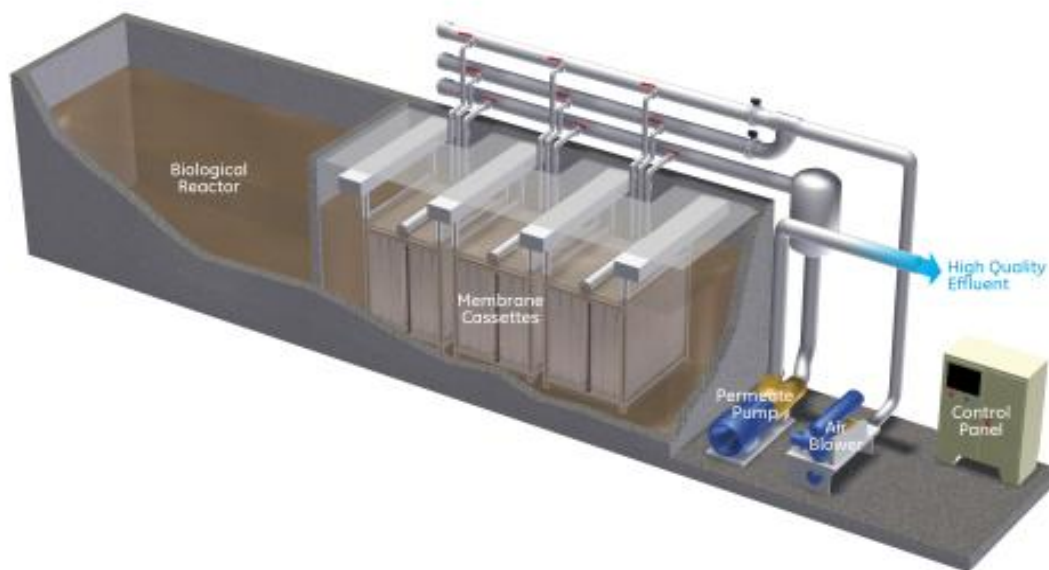


WASTEWATER TREATMENT PLANT

MAN-WWTP™ SERIES

MAN-WWTP™ is a fully automatic wastewater treatment plant especially designed for domestic wastewater treatment applications with capacities ranging from 10 people to 100000 people

MAN-WWTP™ has been developed to combine the stability and simplicity of the activated sludge process with a highly efficient submerged membrane bio reactor (MBR) process. The system is supplied in modules as a pre-assembled system or as parts which can be mounted and installed in existing concrete tanks.



MAN-WWTP™ wastewater treatment plant delivers treated waste water that exceeds the most stringent standards for effluent discharge or re use, and eliminates the requirement for a clarifier or a filter. With the MAN-WWTP™, it is possible to achieve effluent BOD and TSS almost to non-detectable limits.

MAN-WWTP™ INLET AND OUTLET WATER QUALITY CHARACTERISTICS

Item	Raw water quality	MAN-WWTP™ Treated water	National standard 1 class (GB 18918-2002) (1 class, standard B)
BOD5 (mg/L)	150 ~ 250	< 20	20
CODcr (mg/L)	200 ~ 400	< 60	60
SS (mg/L)	150 ~ 250	< 20	20
NH3-N (mg/L)	10 ~ 35	< 15	15
pH		6 ~ 9	

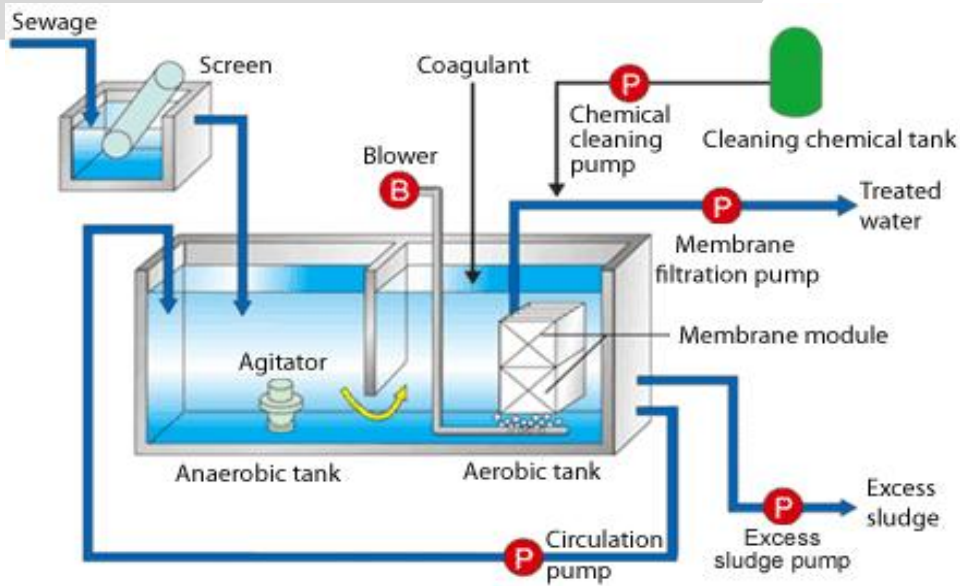
MODEL	MAN-WWTP™ MBR-5	MAN-WWTP™ MBR-10	MAN-WWTP™ MBR-15	MAN-WWTP™ MBR-20	MAN-WWTP™ MBR-30	MAN-WWTP™ MBR-45	MAN-WWTP™ MBR-60	MAN-WWTP™ MBR-70
Standard Treatment Capacity (m³/day)	0~5	6~11	12~17	18~23	24~34	35~46	47~60	60~70
1 Blower	2HB410	2HB410	2HB410	2HB410	2HB410	2HB410	2HB410	2HB420
Motor power (KW)	0.85	0.85	0.85	0.85	1.3	1.3	1.3	1.6
2 Self-priming pump	25ZX3. 2-20	25ZX3. 2-20	25ZX3. 2-20	25ZX3. 2-32	25ZX3. 2-32	40ZX6. 3-20	40ZX6. 3-20	40ZX6. 3-20
Motor power (KW)	0.75	0.75	1.1	1.1	1.1	1.1	1.1	1.1
3 Sludge pump	25WQ8-22-1.1	25WQ8-22-1.1	25WQ8-22-1.1	32WQ12-15-1.1	32WQ12-15-1.1	40WQ10-15-1.5	40WQ10-15-1.5	40WQ10-15-1.5
Motor power (KW)	1.1	1.1	1.1	1.1	1.1	1.5	1.5	1.5
4 Membrane area (m²)	20	40	60	80	120	160	200	240
5 Equipment size (m)	4.0×1.5×2.5	4.0×1.5×2.5	4.0×1.5×2.5	4.0×1.5×2.5	4.5×2.0×2.5	5.0×2.0×2.5	5.0×2.0×2.5	5.5×2.0×2.5
6 Total weight (t)	2.10	2.15	2.20	2.25	3.10	3.20	3.30	3.50

NOTES

1. Standard Power supply: 380V 50Hz 3Phase or 220V 50Hz 1Phase
2. Input water: domestic sewage or equivalent wastewater (mg/L): COD 400, BOD 250, SS 200.
3. Output water (mg/L): COD 30, BOD 20, SS 20. Higher than nation 1st class discharge standard.
4. Purpose: Output water can be used for toilet flushing, agricultural irrigation, general domestic use or can be discharged directly to environment
5. Advantage: Use advanced membrane bioreactor treatment process, good adaptability for input water quality fluctuate, stable output water quality.
6. Equipment core parts are made of good corrosion resistance and good chemical cleansing performance (PVDF material) which have long-life.

MODEL		MAN-WWTP™ MBR-80	MAN-WWTP™ MBR-100	MAN-WWTP™ MBR-120	MAN-WWTP™ MBR-130	MAN-WWTP™ MBR-160	MAN-WWTP™ MBR-180	MAN-WWTP™ MBR-200 /-100×2	MAN-WWTP™ MBR-240/ -120×2
Standard Treatment Capacity (m³/day)		71~80	81~104	101~121	122~132	133~160	151~185	182~208	205~240
1	Blower	2HB420	2HB420	2HB420	2HB420	2HB420	2HB420/2	2HB420/2	2HB420/2
	Motor power (KW)	1.6	2.2	2.2	2.2	2.2	4.4	4.4	4.4
2	Self-priming pump	50ZX15-20	50ZX15-20	50ZX15-20	50ZX15-20	50ZX15-20	50ZX18-20	50ZX15-20/2	50ZX15-20/2
	Motor power (KW)	1.5	1.5	1.5	1.5	1.5	2.2	3.0	3.0
3	Sludge pump	50WQ10-15-1.5	50WQ10-15-1.5	50WQ10-15-1.5	50WQ10-15-1.5	50WQ10-15-1.5	50WQ10-15-1.5	50WQ10-15-1.5/2	50WQ10-15-1.5/2
	Motor power (KW)	1.5	1.5	1.5	1.5	1.5	1.5	3.0	3.0
4	Membrane area (m²)	280	360	420	460	560	640	720	840
5	Equipment size (m)	6.5×2.0×2.5	6.5×2.0×3.0	7.0×2.0×3.0	7.0×2.0×3.0	8.0×2.0×3.0	10×2.0×3.0	6.5×4.0×3.0	7.0×4.0×3.0
6	Total weight (t)	4.20	4.50	5.20	5.25	5.50	6.00	9.00	10.40
NOTES									
1. Standard Power supply: 380V 50Hz 3Phase or 220V 50Hz 1Phase 2. Input water: domestic sewage or equivalent wastewater (mg/L): COD 400, BOD 250, SS 200. 3. Output water (mg/L): COD 30, BOD 20, SS 20. Higher than nation 1st class discharge standard. 4. Purpose: Output water can be used for toilet flushing, agricultural irrigation, general domestic use or can be discharged directly to environment 5. Advantage: Use advanced membrane bioreactor treatment process, good adaptability for input water quality fluctuate, stable output water quality. 6. Equipment core parts are made of good corrosion resistance and good chemical cleansing performance (PVDF material) which have long-life.									

Process Description



There are just a few simple steps in the MAN-WWTP™ process. The first step consists of an appropriate mechanical screen for initial solids removal. The wastewater then flows to an equalization tank to provide a uniform flow through the biological treatment section where the MBR modules are installed.

The membrane filtration of the wastewater takes place in an aerobic environment where one or more membrane modules are installed inside the membrane tank. Air diffusers located below the membrane module scour the membrane surface so that minimum periodic chemical cleaning is required. In addition, the diffusers create a vertically upward flow on the surface of the membrane to continuously provide a homogeneous solution of waste water for treatment.

All MAN-WWTP™ apply the “outside-in” filtration mode and both the “flat sheet” or “hollow fiber” membrane modules can be implemented.

APPLICATIONS OF MAN-WWTP™ SYSTEM

- ◇ New wastewater treatment facilities as a self contained and pre-assembled package plants
- ◇ New wastewater treatment facilities using cast-in-place or pre-cast concrete tanks
- ◇ Retrofit of existing plants to provide nitrification, denitrification and biological phosphorus removal
- ◇ Modernization of existing plants for increased flow capacity and reduced power consumption

ADVANTAGES OF MAN-WWTP™ SYSTEM

- ◆ Advanced Wastewater Treatment process with increased efficiency
- ◆ Simple Control System
- ◆ Easy and Simple Construction
- ◆ Reliability of Operation
- ◆ Optimum Consistency of the Sludge
- ◆ Reduced Need for Space, and Lower Cost to Build
- ◆ No Annoying Odour and Low Noise Levels
- ◆ Reduced Power Consumption and Operating Cost

MEMBER



Global WaterMAN, AFRICA OFFICE
DAVCHEM WATER CENTER, MOMBASA RD
NAIROBI, KENYA

Email: africa@globalwaterman.com
www.globalwaterman.com

Global WaterMAN, CHINA OFFICE
Sunshine Building, No 2581, HuNan Road,
Pudong, SHANGHAI, CHINA

Email: china@globalwaterman.com
www.globalwaterman.com

Global WaterMAN, LLC
1907 N. Deerpark Dr. Fullerton
CA 92831, USA

Email: sales@globalwaterman.com
www.globalwaterman.com