

VTP Series Built-in Vacuum System



Facet Sewage Treatment Plants VTP Series for marine applications are designed for the treatment of black waters (coming from W.C., urinals and hospital) and grey waters (sinks, showers, laundry and galley) generated onboard ships. This treatment consists in the purification and later disinfection of waters in order to achieve a quality effluent meeting all requirements. These plants treat black waters by biological means, this is that they are of the active sludge, prolonged aeration, aerobic type.

The plants are built in a single steel module to ease transportation and onboard installation. Inside this module, three chambers (aeration, settling and disinfection) especially designed, have been arranged in order to guarantee its correct operation and to avoid sludge generation. Each chamber has been provided with the necessary access and inspection register.

The air diffusers are located in the aeration chamber and they produce both oxygenation and shaking of the liquid to be treated. Due to the special design of the settling chamber, the active sludge inside it is separated from the effluent and automatically recirculated to the aeration chamber. Both, the clarified liquid and grey waters reach the disinfection chamber where a chlorine solution is dosed in order to remove fecal coliform bacteria. Once disinfection has taken place, the effluent is automatically or manually discharged overboard or into a different installation.

Built-in vacuum system takes charge of transportation of black waters along the vacuum system to the treatment plant. The vacuum in the circuit is achieved automatically with the ejector and circulating pump.

Facet Sewage Treatment Plants VTP Series meet Marpol Annex IV Requirements, 8(1)(b) and 9.1.1 Regulations, as well as IMO Resolution MEPC-2(VI), CE Standards 96/98/EC and 98/85/EC; and they do not generate sludge that should be later discharged.

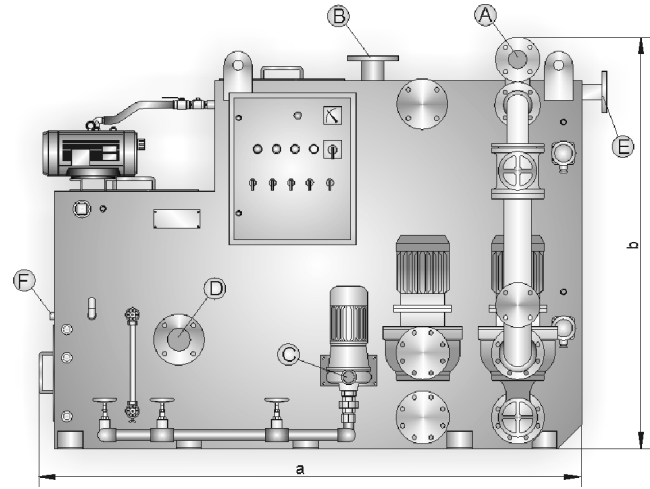
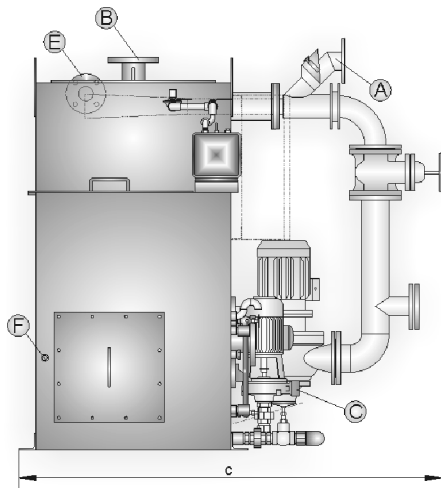
The Plants are supplied completely assembled and tested so that their installation onboard is very quick.

STANDARD FEATURES

- Meet IMO Resolution MEPC-2(VI)
- Certified by the Maritime and Coastguard Agency and the CE
- No sludge generation
- No odour generation
- Fully automatic operation driven by PLC
- Inside and outside Epoxy protective coating
- Aeration system compounded by a blower, an air supply pipe, bubble diffusers, a filter and an air relief valve
- Automatic sludge recirculation system
- Access and inspection registers in every chamber
- Electrical control panel, with IP-55 protection, including operation synoptic panel
- Vacuum ejectors
- Circulating pumps

OPTIONS

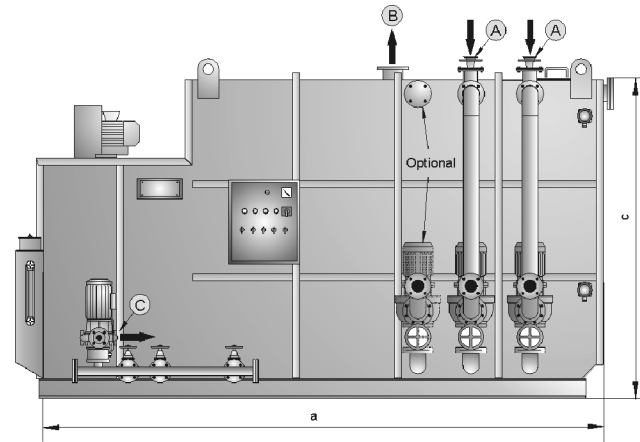
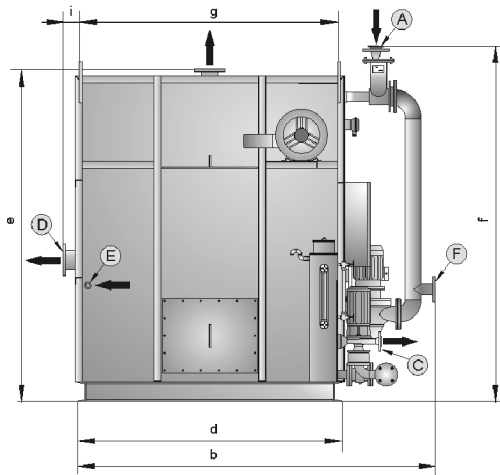
- Stand-by blower
- Stand-by discharge pump
- Chlorine solution dosing pump
- Grease trap



The dimensions are approx

MODEL	DIMENSIONS (mm)		
	a	b	c
VTP-0.5	1600	1550	1550
VTP-1	2150	1560	1650
VTP-1.5	2185	1665	1725
VTP-2	2185	1665	2035
VTP-3	3055	1665	2095

CONNECTION LIST						
MARK	A	B	C	D	E	F
SERVICE	inlet	air vent	discharge	grey water inlet	overflow	inlet chlorine
MODEL	TYPE					
VTP-0.5	DN100	DN80	1 1/2" RH	DN80	DN50	1/2" RH
VTP-1	DN100	DN80	1 1/2" RH	DN80	DN50	1/2" RH
VTP-1.5	DN100	DN80	1 1/2" RH	DN80	DN50	1/2" RH
VTP-2	DN100	DN100	1 1/2" RH	DN80	DN50	1/2" RH
VTP-3	DN100	DN100	1 1/2" RH	DN80	DN50	1/2" RH

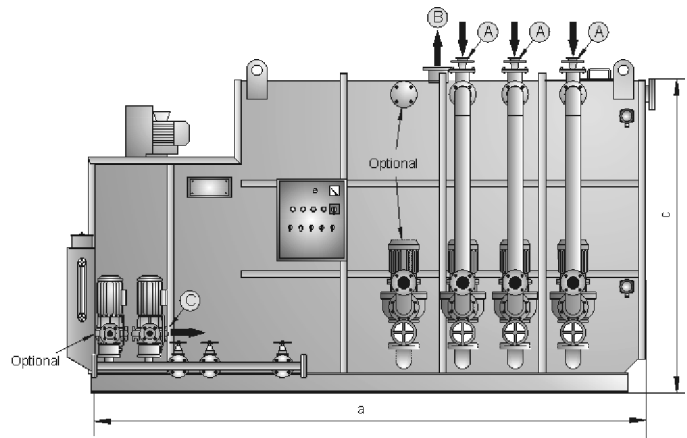
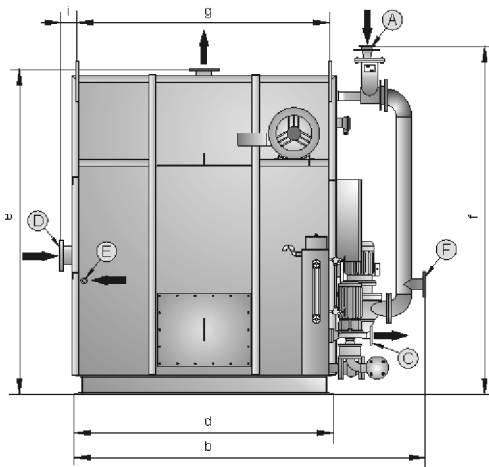


CONNECTION LIST						
MARK	A	B	C	D	E	F
SERVICE	inlet	air vent	discharge	grey water in.	in. chlorine	black w. dis.
MODEL	TYPE					
VTP-4	DN65	DN100	DN32	DN80	1/2" RH BSP	DN65
VTP-6	DN65	DN100	DN32	DN80	1/2" RH BSP	DN65
VTP-8	DN65	DN100	DN32	DN80	1/2" RH BSP	DN65
VTP-10	DN65	DN100	DN32	DN80	1/2" RH BSP	DN65

Note.- Number of ejectors depend on installation

MODEL	DIMENSIONS (mm)							
	a	b	c	d	e	f	g	i
VTP-4	3048	1850	1969	1360	1928	2110	1310	100
VTP-6	3504	2330	1969	1674	2069	2110	1624	100
VTP-8	3444	2530	2274	1878	2374	2415	1828	100
VTP-10	3962	2530	2274	1878	2374	2415	1828	100

The dimensions are approx

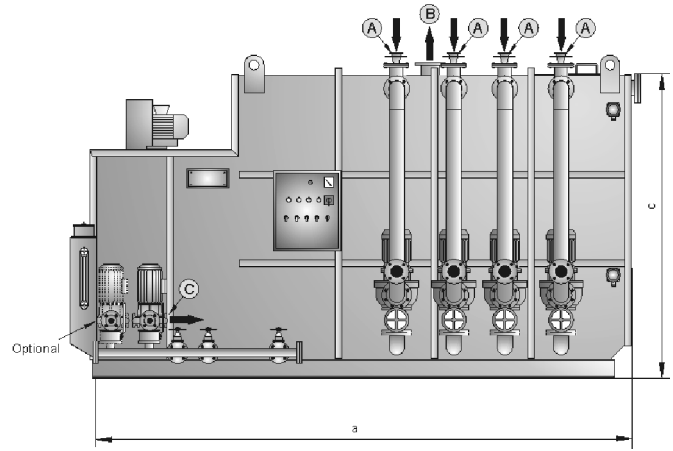
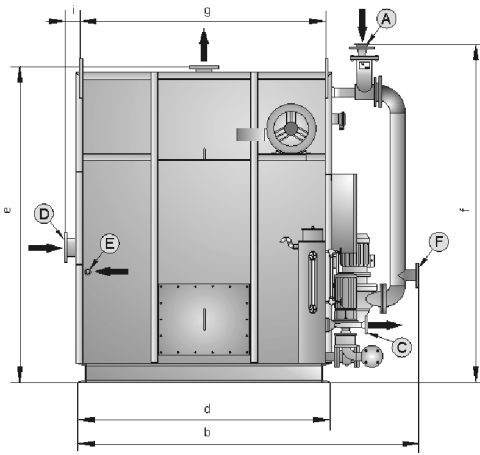


CONNECTION LIST						
MARK	A	B	C	D	E	F
SERVICE	inlet	air vent	discharge	grey water in.	in. chlorine	black w. dis.
MODEL	TYPE					
VTP-12	DN65	DN150	DN32	DN80	1/2" RH BSP	DN65
VTP-14	DN65	DN150	DN32	DN80	1/2" RH BSP	DN65
VTP-16	DN65	DN150	DN32	DN80	1/2" RH BSP	DN65
VTP-18	DN65	DN150	DN32	DN80	1/2" RH BSP	DN65

Note.- Number of ejectors depend on installation

MODEL	DIMENSIONS (mm)							
	a	b	c	d	e	f	g	i
VTP-12	4333	2944	2274	2184	2374	2415	2134	100
VTP-14	4885	2944	2274	2184	2374	2415	2134	100
VTP-16	4990	2944	2578	2184	2678	2719	2134	100
VTP-18	4990	3248	2578	2488	2678	2719	2438	100

The dimensions are approx

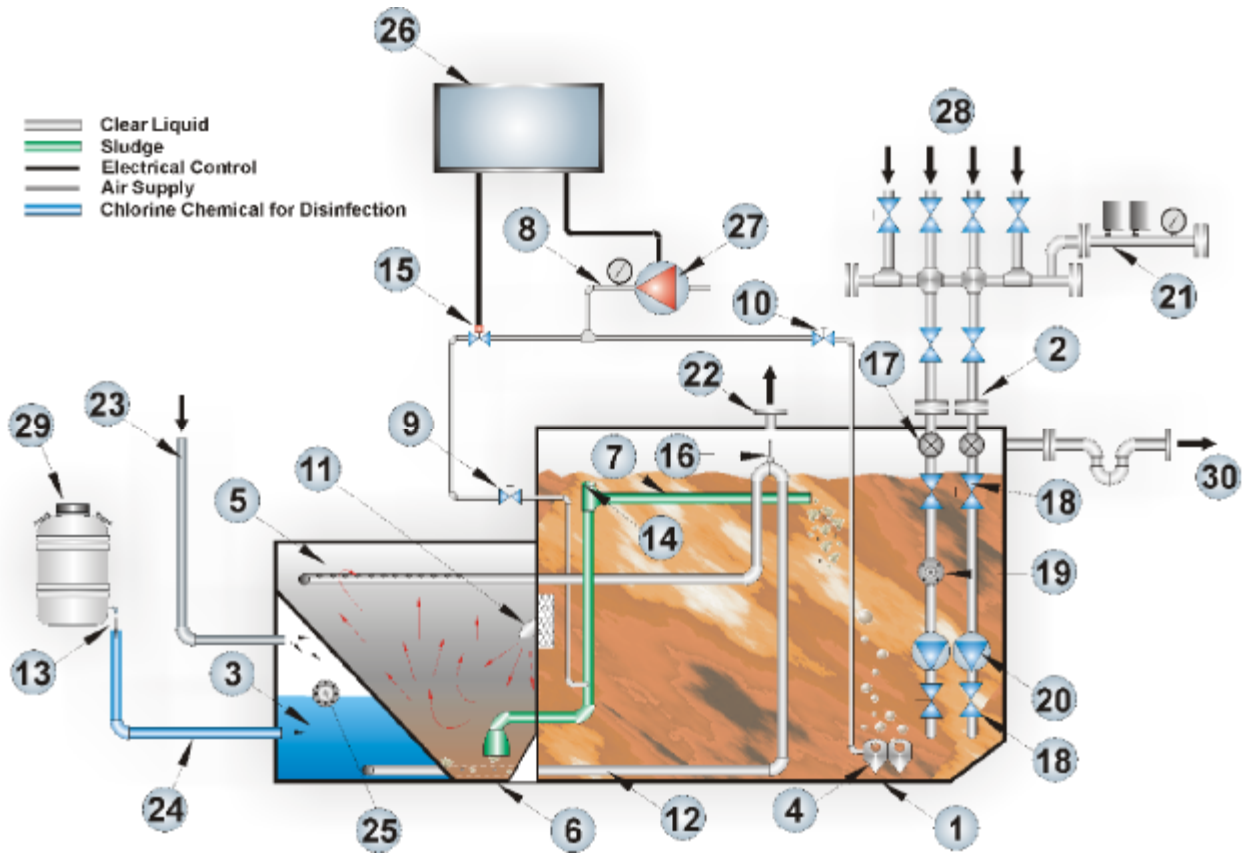


CONNECTION LIST						
MARK	A	B	C	D	E	F
SERVICE	inlet	air vent	discharge	grey water in.	in. chlorine	black w. dis.
MODEL	TYPE					
VTP-20	DN65	DN150	DN32	DN80	1/2" RH BSP	DN65
VTP-22	DN65	DN150	DN32	DN80	1/2" RH BSP	DN65
VTP-24	DN65	DN150	DN32	DN80	1/2" RH BSP	DN65
VTP-30	DN65	DN200	DN32	DN80	1/2" RH BSP	DN65

Note.- Number of ejectors depend on installation

MODEL	DIMENSIONS (mm)							
	A	B	C	D	E	F	G	I
VTP-20	5442	3248	2578	2488	2678	2719	2438	100
VTP-22	5277	3248	2883	2488	2983	3024	2438	100
VTP-24	5037	3553	2883	2793	2983	3024	2743	100
VTP-30	5646	3860	2883	3098	2983	3024	3048	100

The dimensions are approx



ITEM	DESCRIPTION
1	Aeration chamber
2	Sewage inlet
3	Chlorine contact discharge chamber
4	Stainless steel non-clog air diffusers
5	Clarifier
6	Bottom of clarifier hopper
7	Sludge return line
8	Sewage treatment unit air supply
9	Sludge return line air supply needle valve
10	Diffuser air supply valve
11	Clarifier inlet baffle pipe
12	Crossover manifold (discharge from clarifier to chlorine contact chamber)
13	Chlorine chemical injection
14	Sludge return cleanout
15	Sludge return air supply solenoid valve
16	Anti-syphon vent
17	Vacuum ejector
18	Vacuum manifold valves
19	Discharge valves
20	Circulation ejector pump
21	Vacuum control manifold
22	Air vent to atmosphere
23	Grey water inlet
24	Chlorine chemical injection
25	Treated liquid discharge from sewage treatment unit
26	Control panel
27	Blower
28	Sewage inlet pipe
29	Chlorine tank
30	To bilge