

Chloropac® Systems for Marine Growth Prevention

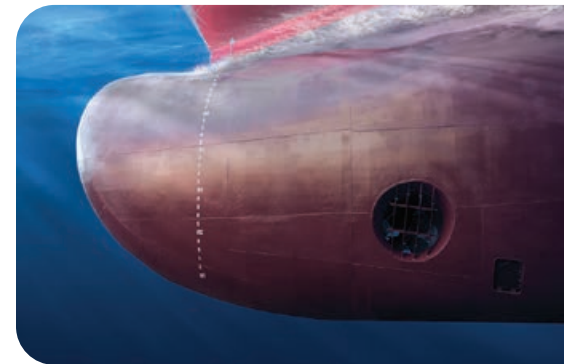
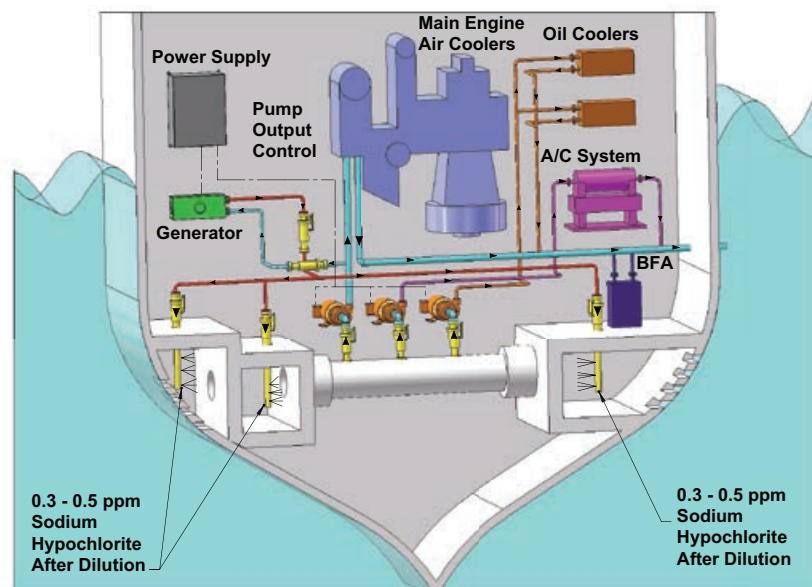
The Chloropac® sodium hypochlorite generating system is designed to prevent marine growth in sea water piping, heat exchangers, sea chests and coolers. A proven system with thousands of installations, low level continuous hypochlorination has been shown to be more effective than other types of marine growth prevention systems.

Water is removed via side-stream from a main sea water line and flows at a high velocity through the Chloropac cells where part of the salt is converted to sodium hypochlorite (NaOCl).

The hypochlorite mixture is then sent to the ship's sea chest(s) and mixed with sea water. The cooling water from the sea chests will now contain a trace residual sufficient to prevent the attachment and growth of marine organisms, thus keeping all circuits—from intake to discharge—free from fouling.

Sea water circulating pumps can be interconnected with the Chloropac system to ensure the sodium hypochlorite generated is automatically adjusted to suit the flow rates on board. Overboard discharge is at minimal detectable amounts.

Suitable Chloropac systems are available from our extensive shipboard range to treat all sea water flowrates.



FEATURES & BENEFITS

- Highly efficient chlorine generation
- Improved seawater velocities for self-cleaning
- Modular design for easy installation
- Compact system for small footprint
- Simple service exchange

TYPICAL INSTALLATIONS

- Tankers
- Cruise Ships
- Offshore Supply Vessels
- Drilling Rigs
- Navy Vessels
- Fishing Boats
- Work Boats
- Ferries
- Container Vessels

KEY CHLOROPAC® FEATURES

- The Chloropac® System has been shown to be highly effective in eliminating marine growth. Continuous hypochlorination (0.5 ppm or less) will control micro fouling (slime, algae, and weeds) as well as macro fouling (barnacles, mussels, clams, hydroids, etc.)
- Chloropac system controllers can be adjusted manually or automatically to control the amount of hypochlorite being produced. The overboard discharge can be controlled to zero or near zero residual. No pollutants or heavy metals are discharged overboard.
- The Chloropac system utilizes platinum on titanium electrolytic cells (anodes) to produce the hypochlorite from sea water. The concentric tube electrode design allows the system to be self-cleaning and no acid wash is required. The Chloropac system is designed to last the lifetime of the vessel and can provide up to 300% cost savings compared to copper anodes over a 20 year lifespan.
- Chemicals are not required as the low level of hypochlorite is produced by the Chloropac electrolytic generator and all production is injected into the sea chests.

CHLOROPAC® SPECIFICATIONS

Model	Nominal Rated lbs/hr (kg/hr)	Input Power KVA	Output Voltage DC	Output Amps DC	Minimum Flow Required GPM (m ³ /hr)	Seawater Treated to 0.5 ppm GPM (m ³ /hr)	Pressure Drops Across Cell PSI	Power Supply				Generator			
								Height	Length	Depth	Weight	Height	Length	Depth	Weight
								inch (mm)	inch (mm)	inch (mm)	lbs (kg)	inch (mm)	inch (mm)	inch (mm)	lbs (kg)
SB50	0.13 (0.05)	0.7	15	25	7 (1.5)	440 (100)	1.5	24 (610)	29 (737)	15 (381)	225 (102)	12 (305)	38 (965)	15 (381)	50 (23)
SB100	0.22 (0.1)	1.4	15	45	7 (1.5)	880 (200)	3	33 (835)	29 (737)	15 (381)	225 (102)	12 (305)	38 (965)	15 (381)	50 (23)
SB200	0.44 (0.2)	2.6	15	90	7 (1.5)	1760 (400)	3	48 (1219)	36 (914)	17 (433)	330 (150)	13 (318)	39 (997)	15 (381)	95 (43)
SB500	1.1 (0.5)	5.8	15	220	25 (5.7)	4400 (1000)	3	48 (1219)	36 (914)	17 (433)	330 (150)	13 (318)	39 (997)	15 (381)	102 (46)
SB1K	2.2 (1)	8	15	440	25 (5.7)	8800 (2000)	3	48 (1219)	36 (914)	17 (433)	330 (150)	12 (304)	61 (1546)	18 (457)	162 (73)
SB2K	4.4 (2)	17	30	440	25 (5.7)	17600 (4000)	6	48 (1219)	36 (914)	17 (433)	330 (150)	18 (460)	61 (1546)	18 (457)	270 (122)
SB3K	6.6 (3)	26	45	440	25 (5.7)	26400 (6000)	9	72 (1829)	36 (914)	17 (433)	630 (286)	27 (673)	61 (1546)	18 (457)	330 (150)
SB4K	8.8 (4)	34	60	440	25 (5.7)	35200 (8000)	12	64 (1626)	39 (991)	26 (660)	1540 (700)	32 (813)	61 (1524)	18 (457)	352 (160)
SB5K	11 (5)	43	75	440	25 (5.7)	44000 (10000)	15	64 (1626)	39 (991)	26 (660)	1650 (750)	39 (991)	61 (1524)	18 (457)	418 (190)
SB6K	13.2 (6)	52	90	440	25 (5.7)	12000 (52800)	18	64 (1626)	39 (991)	26 (660)	1760 (800)	46 (1168)	61 (1524)	18 (457)	484 (220)

Note that all the data above is expressed in nominal values.