

## Global network

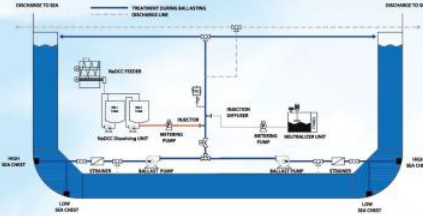


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Another Innovation  
**NK-CL BlueBallast**

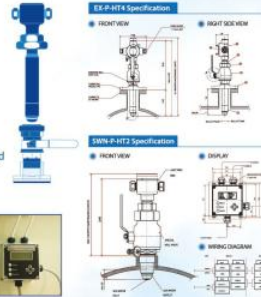
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## 04 NK-CL Flow Overview



## 05 NK-TRO (Elec. type)

- Simple installation at Main pipe line
- Easy maintenance via Hot Tap Valve
- Simple logic for sampling procedure
- Few parts of unit required for measuring TRO



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## 06 Specification of System

Model	Type	Ballast water flow rate (m <sup>3</sup> /hr)	NaDCC Concentration (mg/L)	NaDCC Filter rate (L/hr)	Power Consumption (kW)	Weight (kg)	Footprint (mm)
NK-CL-01		150 * 2		110.3	12.2	1,045	1.85
NK-CL-02		300 * 2	15	272.9	12.2	1,231	3.45
NK-CL-03		500 * 2					
		750 * 2		442.5	12.6	1,538	6.05
		1,000 * 2					

## 07 System Consist

### Storage & Dissolving Unit

NaDCC storage and dissolving unit is comprised of metering feeder in top, dual dissolving tank and injection pump for injection of NaDCC solution in bottom. Injection pump controls the dosage of NaDCC solution according to TRO concentration.



### Neutralizer Unit

The NK-CL System will only inject NaDCC. Neutralizer automatically if the TRO concentration of the treated ballast water is higher than 0.2mg/L.



### Main Control Panel



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NK-CL BlueBallast

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# Another Innovation NK-CL BlueBallast

# NK

New type  
CL-BlueBallast Content

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## 01 Features & Benefit

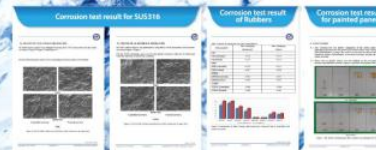
- Perfect treatment**
  - In any type of the water
  - Not influenced by salinity
- Extremely low power consumption**
  - Max power consumption is only 10% comparing with Electrolysis System
- Simple installation**
  - Extremely simple and almost no modification of ship's original ballast pipe line
  - Modular components fitted in plug-and-play format, scalable to any ship type and size



Green Promise for the People

- Simple System**
  - Compact design with minimal ship-board footprint. Easily integrated into ships' existing ballast systems
  - Low risk of technical and mechanical failure of the system
- Easy of maintain and operation**
- Low capital cost and operating cost**

## 02-No corrosion accelerated



## 03 Chemical Consumption

Model Number	NK-CL	015	050	100
Ballast Pump Capacity (m <sup>3</sup> /hr)	150	300	500	1,000
Total Ballast Capacity (m <sup>3</sup> /hr)	300	600	1,000	2,000
NaDCC Chemical Cost \$/BW ton	250	250	250	250
NaDCC Chemical Cost \$/BW time	1,200	2,400	4,000	8,000
NaDCC Chemical Cost \$/BW time	600	1,200	2,000	4,000

TRO concentration set at 15mg/L, the required quantity of NaDCC can be calculated as follows

$$15\text{mg/L} \times \text{Ballast water capacity(m}^3\text{)} \times 1/1,000 \times 1/0.6 = \text{Required NaDCC quantity (kg)}$$