

ECS is characterized by the direct processing process, through which ballast water passes through the electro chamber upon entry into the vessel. The key element that enables equivalent or better processing results without a filter is the self-developed electrode by Techcross.

The electrodes produced by Techcross not only use a highly reactive catalyst in freshwater or brackish water lacking chloride, but also improve efficiency by creating cracks on the surface of the titanium electrode, increasing its surface area. Nevertheless, as the BWMS process is inevitably repeated, the reaction resistance between the electrodes increases due to the scale electrodeposition phenomenon on the surface of the negative electrode.

Additionally, electricity consumption rises to maintain the oxidizer concentration, ultimately reducing the lifespan of BWMS. Therefore, proper cleaning of the ECU is crucially required following the steps below.



1. Procedure for ECU Cleaning

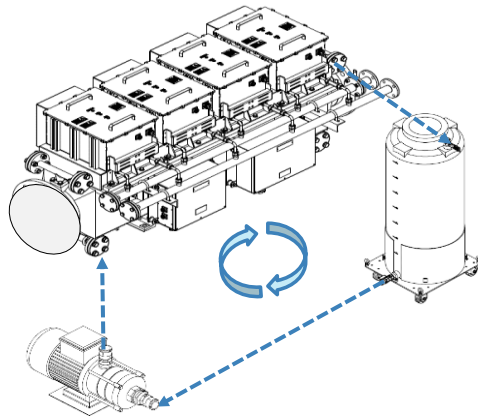
<p>STEP1</p> <p>Filling of fresh water in EWU tank Connect the fresh water service line of ship to EWU tank</p>	<p>STEP2</p> <p>Mixing of citric acid Connection the pump and water tank Circulating Time : Min. 20 minutes (for Mixing of citric acid and fresh water)</p>	<p>STEP3</p> <p>Filling of cleaning agent in ECU Drain sea water from chamber through drain port of ECU. Holding Time : Min.60 minutes</p>	<p>STEP4</p> <p>Circulating cleaning agent for cleaning Circulating for 60minutes.</p>	<p>STEP5</p> <p>Discharging cleaning agent Rinsing out time : Min.15 minutes</p>
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*For more information, please see the attachment : [Manual] Ch.5.74 Procedure of ECU cleaning(Rev03)

2. ECU Cleaning Interval

- 1) Recommended cleaning cycle is approximately 100 hours of operation.
- 2) In case of multiful chamber, repeat the process to each ECU.

3. Dilution Ratio



Model	Fresh water (Liter)	Cleaning agent (Kg)	Dilution ratio (%)
ECS 150	100	10	The mixing ratio is 10 : 1 (Fresh water : Cleaning agent)
ECS 300	150	15	
ECS 450	185	18.5	
ECS 600	220	22	
ECS 1000	300	30	

- ※ Cleaning agent : Citric acid (Powder)
- Attachment : [MSDS] CITRIC ACID_Techcross
- To make a purchase, please contact the Techcross AS team at parts-sales@techcross.com

※ SPECIAL NOTICE : Discontinuation for ABB FMU (FEP3xx series) & Spare Parts

Due to the discontinuation of ABB FMU and spare parts for the existing Techcross BWMS, some items are expected to become sequentially unavailable or experience delays.

<Affected items>

- Sequential discontinuation of FEP3xx series
- Production delays and sequential discontinuation of EX-Back plate board (D685A1160U12)

Techcross plans to pre-order and stock an estimated quantity for approximately two years until Q1 2024. Following this period, a transition to the FEP6xx series will be necessary. Customers planning to purchase or repair these products are encouraged to contact the TECHCROSS AS team for further guidance. We strive to minimize inconvenience for our customers.



TECHCROSS AS HOT-LINE is available 24/7, 365 days a year, ensuring prompt and professional technical support whenever you need it. Feel free to reach out to us!

- Techcross HQ (Available time : UTC 2300 - UTC 0830) : as.managers@techcross.com / +82 51 601 4500 (Mr. JH Kim)
- Techcross US (Available time : UTC 1400 - UTC 2330) : jhcha@techcross.com / +1 832 288 3735 (Mr. Jiho Cha)
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