

To: Customers

Ref: FESN-2105

Mar 2021

Fuji Electric Co., Ltd

Fuji Electric Exhaust Gas Cleaning System (EGCS)

GUIDELINE FOR Prolonged Non-Operation

We would like to express our deepest appreciation to you for your continued support for our ship exhaust gas cleaning systems (EGCS).

We are pleased to announce the guidelines for suspending the use of scrubber for a long period of time.

In addition, these are measures associated with the suspension of scrubber for about one month, and if the suspension is longer than that, please contact us.

<STOP SYSTEM>

1. GAS ANALYZER

1. After stop system (**exhaust gas = BYPASS and wash water pump = STOP**), to be replaced water in the drain water tank newly and continue to run about 12 hours for internal cleaning.
2. Dispose all water in the drain water tank and put empty drain water tank and again to run about 12 hours for drainage purpose in the gas analyzer.
3. Switch off power source. Then to be disconnect any codes and cable from power box.
4. Remove probe box and sampling probe. Then to be cleaned by air blowing and waste rags.
5. Insert blind flange for exhaust gas line.
6. Finally to be disconnected calibration gas for SO₂ and CO₂ with closed.

2. WATER QUALITY METER

1. After stop the system, to be flushed by fresh water and disposed water drain.
2. Close ALL valves related water quality meter.
3. Switch off power source.
4. Remove turbidity sensor and PAH sensor. Then to be cleaned fresh water with waste rages.
Turbidity sensor and PAH sensor to be landed for calibration purpose for another vessel.
5. Remove pH sensor and to be landed it with spare pH sensor to shore.

<PERIODICAL>

3. SCRUBBER UNIT

1. Flush wash water pipes and nozzles in use wash water pump.

Purpose: Cleaning of wash water pipes and wash nozzles

Interval: every week and 30 minutes per time

Should be checked "**FULL OPEN**" for valves of **MV-1, MV-2 and overboard** before wash water pump start.

4. DAMPER

1. Operate manually for exhaust valve damper when stopped each engine.

Purpose: Preventive of stick (Exercise purpose)

Interval: monthly and few times with open and close

※To maintain the condition of the damper, continue to supply control air to the damper.

5. AIR SEAL FAN

1. Operate continuous for air seal of damper with air supply

Purpose: Preventive of gas flow to scrubber side

Interval: continuous

6. CONTROL PANEL

1. Refer to Appendix (1) "Control panel_MCCB_Switching point in the panel" and turn off the Corresponding breakers (MCCB1 and MCCB3) in the control panel.
2. Stop recording the measurement log data of EGCS.

7. Other

1. When restarting the system, inspect each device by service engineer if possible before starting up.
2. Replace all consumables and replacement parts of each device that have passed the replacement cycle at the time of restarting.
3. When the power of the device is turned off, trigger an alarm on the control panel.
4. Prevent analyzer from moisture, dust and unforeseen situation, please protect them with a flame-retardant sheet.
5. Please note that we are not able to guarantee for such a long time suspension of EGCS.