



MARINE

# Freshwater Generator Case Study: MV Detroit Express Hong Kong

Onboard MV Detroit Express, *HydroFLOW*® treatment reduced fresh water generator cleaning frequency, eliminated chemical use, and left only soft scale that was easily removed.

Client details have been anonymised at their request.

**86%**

CIP Cleaning Reduction

**58%**

FWG Openings Reduction

**0**

Chemicals Used

**2.5 mo**

No CIP Needed

## BEFORE & AFTER

### BEFORE

- ✗ CIP (chemical cleaning) every 10 to 12 days
- ✗ FWG opened monthly for cleaning
- ✗ Chemicals used for dosing and cleaning

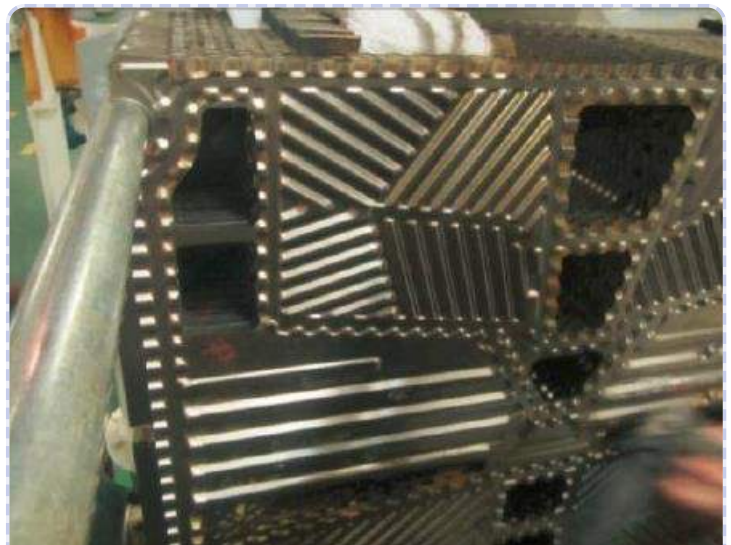
### AFTER

- ✓ Only 5 CIP cleans in 12 months
- ✓ Only 5 FWG openings in 12 months
- ✓ Soft scale removed without chemicals



BEFORE

FWG before cleaning



AFTER

FWG plates after cleaning

## OVERVIEW

Hydropath Marine HM-100 was installed on the seawater inlet pipe serving the freshwater generator onboard MV Detroit Express. The objective was chemical-free treatment of scale build-up, bacteria, algae and slime on the seawater inlet side and titanium heat exchanger plates, while improving cleaning intervals and overall operating conditions.

## CHALLENGE

The freshwater generator needed frequent CIP cleaning and opening for manual cleaning, with chemical dosing and cleaning also required.

- CIP cleaning was needed every 10 to 12 days.
- FWG opened monthly for cleaning.
- Scale, bacteria, algae and slime caused fouling.
- Chemicals used for dosing and plate cleaning.

## SOLUTION

One HM-100 unit was installed on the seawater inlet pipe after the seawater feed pump and before the freshwater generator.

### UNIT INSTALLED

1x HM-100

### INSTALLATION POINT

Seawater inlet pipe after feed pump

### INSTALL DATE

12 August 2016

### TRIAL PERIOD

12 months

## RESULTS

### 86% reduction in CIP cleans

Only 5 CIP cleanings in 12 months, compared to ~36 before treatment.

### 58% reduction in FWG openings

Only 5 FWG openings in 12 months, compared to 12 previously.

### No chemicals used

Dosing and cleaning chemicals were no longer required.

### No CIP required for 2.5 months

No CIP or opening required between February and April 2017.

### Soft scale easily removed

Soft deposits were easily removed without chemicals.

### Improved system performance

Crew records showed improved freshwater generator performance.

### KEY TAKEAWAY

## Summary

Onboard MV Detroit Express, HydroFLOW® improved freshwater generator performance over a 12-month trial. CIP cleaning fell from about 36 cleans to 5, and FWG openings reduced from 12 to 5. Chemical use for dosing and plate cleaning was eliminated. The system also ran for around 2.5 months with no need for CIP or opening.

**86%**

CIP REDUCTION

**58%**

FWG OPENINGS REDUCTION

**0**

CHEMICALS USED



## ADDITIONAL PHOTO EVIDENCE



### RESULTS

Removed soft scale without chemicals



### BEFORE

Heavy fouling on FWG plates before cleaning



### BEFORE

Severe scale and deposits on plates before cleaning



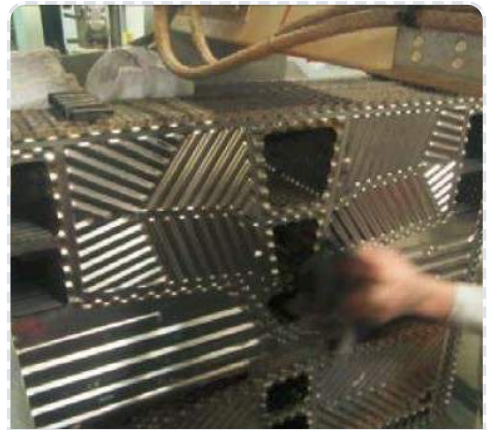
### BEFORE

FWG plates covered with scale and marine deposits



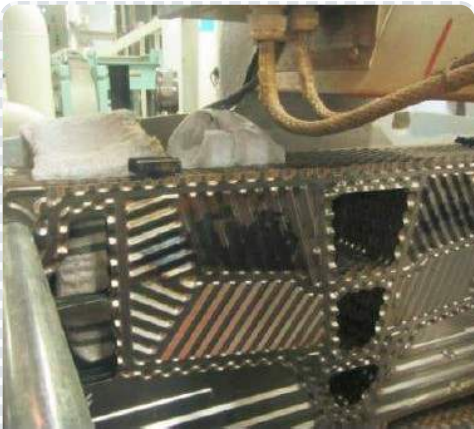
### AFTER

Clean heat exchanger plates after treatment



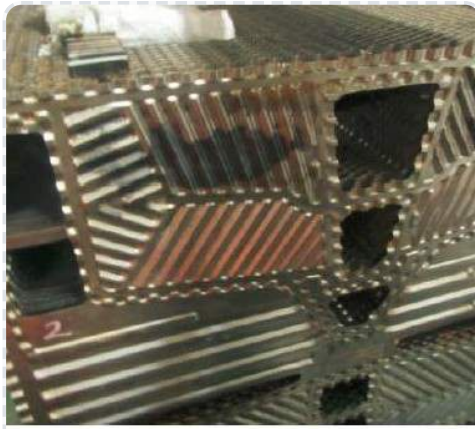
### AFTER

Soft scale easily removed by hand without chemicals



### AFTER

Clean plates with minimal residual deposits



### AFTER

Improved plate condition after HydroFLOW treatment

**HYDROPATH** ©

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