



# Hydraulic Oil Hydraulic Control, Engine MAN 12K98 ME-C6

## CJC® Application Study



### THE CUSTOMER

Hapag-Lloyd AG, Hamburg, Germany.  
Container vessel: MS "Colombo Express", 8,600 TEU

### THE SYSTEM

Hydraulic control of the fuel injection pump and exhaust valves on the main engine.

Engine: MAN 12K98 ME-C6  
Oil type: Lube oil, Mobilgard 300  
Viscosity: 111 cSt at 40°C  
Oil volume: 16,000 litres

### THE PROBLEM

Because of problems in the hydraulic control system the customer has taken an oil sample. The oil analysis has shown high contamination with water and particles.

### THE SOLUTION

Installation of a **CJC® Oil-Care System 427/81** with CJC® Fine Filter Insert B 427/81 (3 µm absolute) for continuous fine filtration and dewatering of the lube oil (24/7/365).

Dirt holding capacity: bis zu 144 kg  
Water holding capacity: approx. 14.4 L  
Filter material: 100% renewable raw material

The CJC® Oil-Care System removes particles, water, oil degradation products and acid compounds with extremely high efficiency from the oil.

### THE RESULT

Since the installation, there have been no failures. The convincing results (see table) prompted Hapag-Lloyd to install identical filters on in total 24 vessels of different classes up to 13,000 TEU.

#### The 24 container vessels:

- Colombo Express
- Kyoto Express
- Bremen Express
- Chicago Express
- Hannover Express
- Osaka Express
- Tsingtao Express
- Kuala Lumpur Express
- Vienna Express
- Basle Express
- Budapest Express
- Frankfurt Express
- Prague Express
- Sofia Express
- Hamburg Express
- Hong Kong Express
- New York Express
- Nagoya Express
- Shanghai Express
- Essen Express
- Antwerpen Express
- Leverkusen Express
- Ludwigshafen Express
- Ulsan Express



MS "Colombo Express"



MAN engine 12K98 ME-C6



CJC® Oil-Care System 427/81  
installed in the engine room

### THE RESULT

Date	Before	After 2,5 months	After 4 months	After < 5 months
Particle > 2 µm	3,031,840	25,398	43,610	8,465
Particle > 5 µm	384,800	11,544	16,936	1,539
Particle > 15 µm	35,650	633	725	66
ISO Code	22/19/16	15/14/10	16/15/10	14/11/7
Water, ppm	1,300	1,100	1,065	851

### COMMENT

**Mr. Lars Voß, Technical Inspector, Hapag-Lloyd GmbH:**  
"Nothing but the installation of the CJC Fine Filters enabled us to meet the requirements of the ME-hydraulic system."