

Eliminate varnish problems in your gas turbine lube oil system

CJC™ Fine Filter System

Use this:

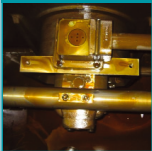
CJC™ Filter mounted to adsorb resin residues and clean both oil and oil system

Achieve this:

Prolonged oil life • A clean lube oil system • Less down time • Lower maintenance costs

Avoid this:

Valve failure • Sticking valves • Difficult start ups
Oil degradation • Reduced oil performance • Loss of lubricity • Increased wear
Malfunctions in pumps and bearings • Rapidly blocked inline filters



Examples of varnish

Oil Maintenance



www.cjc.dk



OIL MAINTENANCE

Varnish Removal Filter Systems GE 7EA Gas Turbines

DATA SHEET

APPLICATION

The **HDU 27/108 C.C. Jensen Fine Filter System** is used for oil maintenance of lubricating oil used in GE 7EA Gas Turbines.

FUNCTION

The filter system pump draws oil from the reservoir and presses it outside-in through the cellulose filter inserts. From the center of the insert the fluid flows through the filter base and returns to the tank.

The pressure drop over the filter is monitored on the pressure gauge between the pump and filter housing. The filter outlet is placed in the filter base. The filtered oil is returned to the reservoir.

FILTER PUMP

The filter pump is a gear-type pump that features a high dirt tolerance. The electric motor can be supplied for various AC voltages.

FILTER INSERT

The **C.C. Jensen Fine Filter Inserts** consist of several discs bonded together. The media is cellulose. The filter has a rating of 3 µm (micron) absolute and approximately 50% of all particles >0.8 µm will be retained in one pass.

The filters will also remove **varnish** by **adsorption**.



**C.C. Jensen Fine Filter System
HDU 27/108**

OPTIONS

- Drip Pan or Drain Tank
- Mobile Cart or Mobile Skid
- Pressure Switch
- Control Box

TECHNICAL DATA

Pump Flow	5-10 gpm
Filter Inserts	4 x A or B 27/27
Power Consumption	0.25 kW
Full Load Amps	8 Amps or less
Dirt Holding Capacity	48-60 pounds
Varnish Removal	32 pounds minimum



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OIL MAINTENANCE

Varnish Removal Filter Systems GE 7EA Gas Turbines

CASE STUDY

Customer: North American Power Plant Owner and Operator

Turbine Type: General Electric 7EA Gas Turbine

Filter Type: C.C. Jensen Fine Filter System
HDU 27/108 MZ-E1MPT
Mobile Drain Tank
Manual Motor Starter
Pressure Switch
Filter Inserts – 4 x B 27/27

Run Time: September 21, 2006 until Present

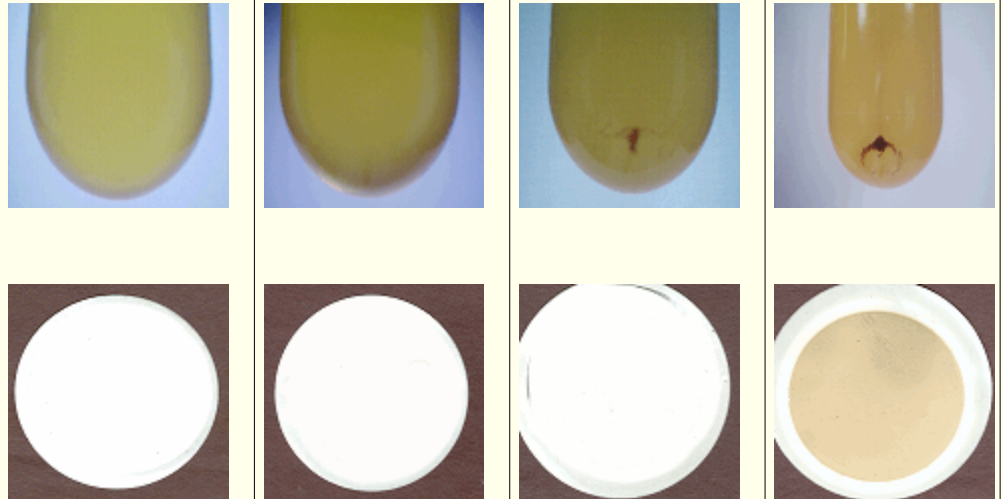
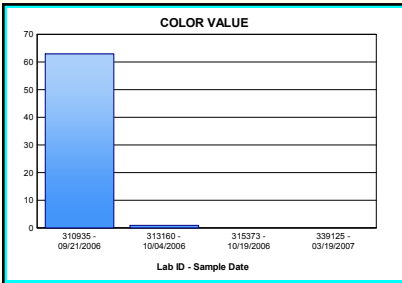
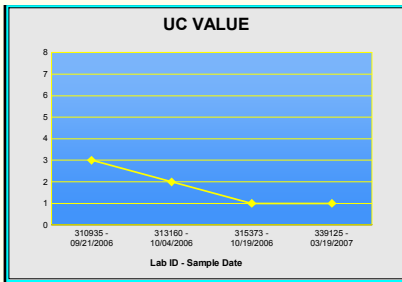
Oil Analysis Results		
Test	September 21, 2006	March 19, 2007
Ultra Centrifuge	3	1
Colorimetric Analysis	63	0
Particle Count (0.2-1 micron)	20,200,000	3,370

VARNISHING POTENTIAL ANALYSIS

Lube Type: CONOCO DIAMOND 32	Received: 3/22/07	CT #1 CLRMTRC
Machine MFG: GENERAL ELECTRIC	Report: 4/3/07	
Machine MOD: MS7001EA	Sample No: 932-1-2001	
Machine Type: Industrial Turbine		

Observations/Recommendations

The current test results indicate a low level of degradation by-products associated with varnishing. Please continue routine sampling to monitor the trend in the level.



Sample Date	03/19/2007	10/19/2006	10/04/2006	09/21/2006
LABID	339125	315373	313160	310935
ULTRA CENTRIFUGE TEST				
UC Value	1	1	2	3
MICROSCOPIC PARTICLE COUNT				
Particles .2-1	3,370	729	865	20,200,000
Particles 1-2	649	546	303	11,000
Particles 2-5	346	318	173	2,200
COLORMETRIC ANALYSIS				
Color Value (M/C/Y/B) T	(0/0/0/0)0	(0/0/0/0)0	(0/0/1/0)1	(17/8/38/0)63
PHYSICAL PROPERTIES				
	REFERENCE			
Acid Number	-	0.060	0.060	0.170
Karl Fischer Water	0	0.005	0.006	0.013
Oxidation	-	4	4	1
Nitration	-	2	2	1