

# HILCO Oil Conditioning Systems

Remove Moisture and Particulate Contamination  
from Steam and Gas Turbine Lube Oils



**HILCO**  
FILTRATION SYSTEMS



# The Hilliard Corporation is a **WORLD LEADER**



in oil conditioning systems and has  
**Hilco® systems in operation world-wide.**

## Application:

The primary application for oil conditioning is removal of moisture contamination from steam turbine lube oils which have good water separability characteristics (ASTM-D1401) and are commonly found in the power generation industry. Other applications may include refineries, chemical plants, heavy industry and steel mills.

## Benefits:

- Extends oil life
- Easy operation
- Protects system's
- Reduces maintenance
- Economically priced components from corrosion
- Increases bearing life



## Self-Sufficient Stand-Alone Models

## Features:

- System flow rates from 1 to 100 GPM [227-22710 LPH] Positive displacement oil pump with integral relief valve TEFC pump motor
- NEMA or IEC electrical enclosure / controls
- ASME code or non-code pre-filter or post filter vessel(s) ASME code or non-code coalescer/separator vessel Coalescer vessel with or without separator element(s) Clean / dirty sampling ports
- Inlet Y or basket strainer
- Manual or automatic air vents
- Automatic and/or manual water drain utilizing RF point level or tubular magnetic level switches
- Liquid level sight gauge
- Screw or hydraulic jack cover lifter

## Options:

- Explosion-proof electrical controls
- Customer specific vessel, piping and controls features such as valve type, material, bypass loops, flow meter
- Customer specific operation features such as PLC control, motor VFD, transmitters, remote functions,
- lights, outlets, etc.
- Low-watt-density oil heaters
- Pre and/or post particulate filter(s)
- CRN or PED vessels
- Compliance, certifications and markings such as UL, CSA, CE, ATEX, GOST, etc.

## Performance:

- Particulate removal efficiency of 99.5% @ 3
- Free and emulsified water content reduced to under 25 ppm
- Total water content to under 150 ppm based on a process stream content of 5% maximum





## Sizing a System:

Hilco® oil conditioning system should have a flow capacity of at least 1/2% of the total lube oil volume. The following chart depicts the recommended flow rate for reservoir size for each Hilco® oil conditioning system.

| MODEL # | FLOW RATE            | RESERVOIR CAPACITY  |
|---------|----------------------|---------------------|
| 02CS10  | 10 GPM [2,270 LPH]   | 2,000 G [7,750 L]   |
| 02CS20  | 20 GPM [4,540 LPH]   | 4,000 G [15,140 L]  |
| 02CS30  | 30 GPM [6,810 LPH]   | 6,000 G [22,710 L]  |
| 02CS60  | 60 GPM [13,625 LPH]  | 12,000 G [45,425 L] |
| 02CS100 | 100 GPM [22,710 LPH] | 20,000 G [75,710 L] |

## Custom Designs

HILCO's Engineers will analyze your requirements and design systems according to your needs. From the smallest Single-Cartridge Vessel to the most complex Coalescer system. Our lab can evaluate customer samples and recommend performance level and features required.



*Ex: Stainless and Carbon Steel heated system with Pre-filter. Explosion-Proof with purged electrical enclosure and transmitters. 2014*



*Ex: Portable, Carbon steel heated system with 2 Pre-filters. Explosion-Proof; rated for Group B (Hydrogen) atmosphere. 2008*

## Portable Models

### Features:

- Flow capacities from 1 - 30 GPM [227 - 6815 LPH]
- ASME Code and non-code designs available
- Coalescer vessel with or without separator element(s)
- Ability to service the needs of multiple oil reservoirs
- Units may be on wheels, moved by forklift or mounted on a trailer
- Available with or without controls or with customer specific electrical requirements
- Integral particulate filter and coalescer filter arrangement
- liquid level sight gauge



## Single or Multiple-Element Vessels

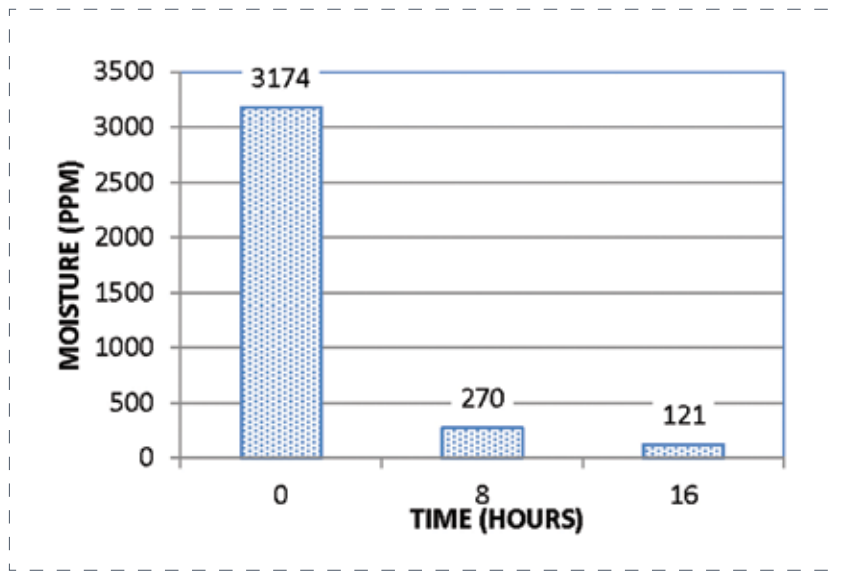
### Features:

- Flow capacities to 100 GPM [22,710 LPH]
- Designed to side stream a portion of existing lube oil system pump flow
- ASME Code and non-code designs available
- Coalescer vessel with or without separator element(s)
- Duplex designs with integral transfer valve available for uninterrupted flow during element change
- Liquid level sight gauge
- Auto drain optional equipment





# Typical System Performance



This chart depicts the moisture content of a 2,000-gallon steam turbine reservoir with a 10-GPM Hilco® oil conditioner installed.



This photo shows before Condition and result of ISO VG32 turbine lube oil, Influent Stream and Effluent Stream.

## Reference Materials

- For Liquid Fuel Coalescers see brochure FPLF
- For Vacuum Dehydrators see brochure ORB-5
- For Vent Mist Eliminators see brochure VME-1



### The Hilliard Corporation

100 West Fourth Street  
Elmira, New York  
14902-1504 USA  
PHONE: 607.733.7121  
FAX: 607.737.1108  
hilliardcorp.com  
hilliard@hilliardcorp.com



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