

*HILCO Model 01ME06-30822101
Installed on a DR 61+ Package*

PRODUCT INFORMATION



VENT MIST ELIMINATOR

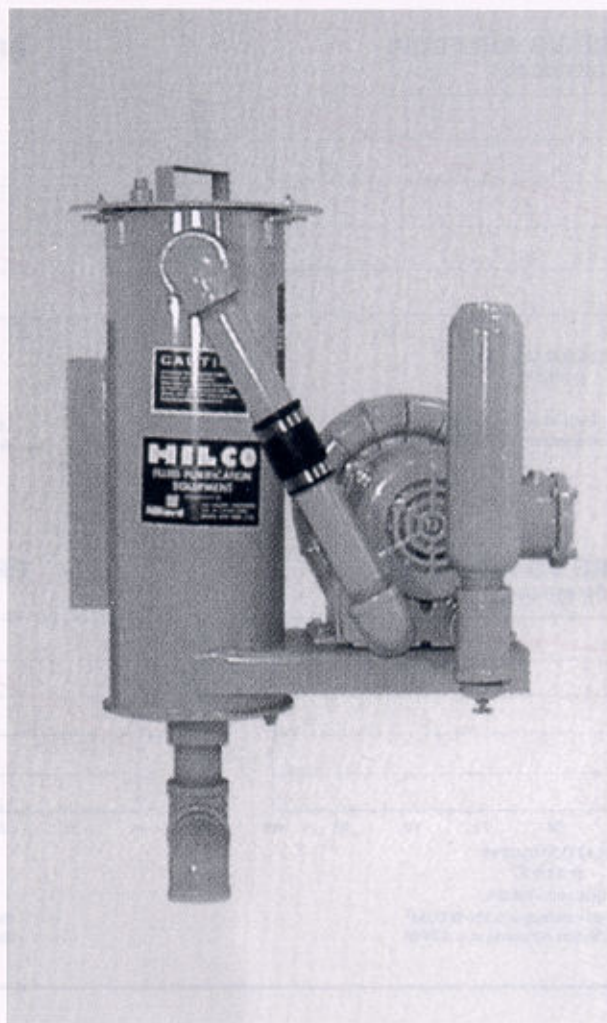
Purpose:

The Vent Mist Eliminator removes visible oil vapor in the air stream of vents from lubricating oil systems of large, high-speed rotating equipment such as:

- gas turbines
- steam turbines
- turbo compressors
- turbo generators
- reciprocating engines
- high-speed couplings
- gearboxes

Two versions—coalescer only and coalescer with blower and silencer—are available. The coalescer model is appropriate for systems that can withstand back pressure. The coalescer with blower and silencer model is designed for systems such as reciprocating engines and turbo generators where back pressure can pose a problem. In this application, the unit acts as a vapor extractor as well as a mist eliminator.

Both models with DM type coalescers eliminate oil mist with 99.9% efficiency.



Benefits:

- Helps insure compliance with government regulations
- Improves safety by eliminating oily residue caused by settling oil mist on engine room floors, stairways, etc.
- Saves make-up oil costs by returning oil to sump which would normally be lost to air or ground
- Keeps environment clean and eliminates exterior oil contamination of buildings and grounds
- Pays for itself in oil savings

Features:

- Tailored to fit specific application requirements
- Fits in compact area
- Highly efficient
- Virtually maintenance free, especially compared to electrostatic precipitation
- Flow rates from 50 to 1,200 ACFM. For higher flow rates, consult factory
- Blower and bypass valve combined in one integral package
- Can be enclosure-roof mounted
- A cooler is available as an option if vapor is over 180°

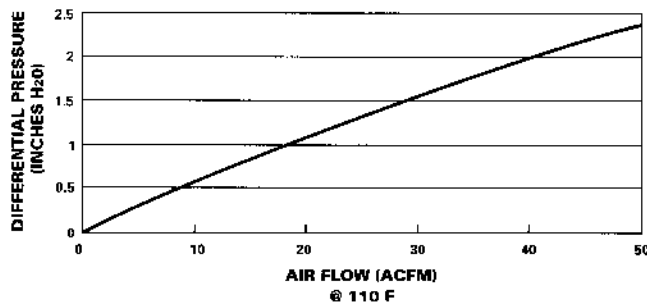
Operation:

Oil mist generated by the reciprocating equipment/turbine is drawn from the breather by the blower. The mist is then pulled through the coalescing cartridges where it is trapped and gathered into droplets which fall to the bottom of the housing. The air, less the captured oil, proceeds through the

blower and the exhaust silencer, and exits the unit.

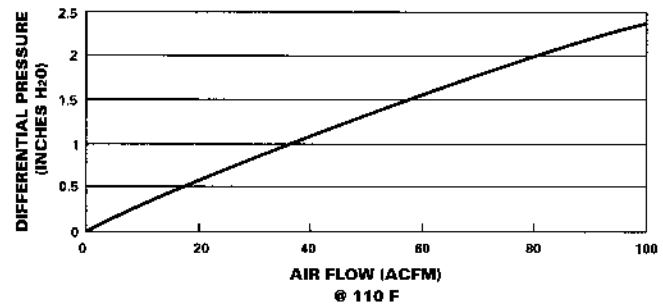
The unit is equipped with an inlet vacuum regulating check valve which ensures that the engine/turbine crank case is always kept at the desired pressure and that the blower is never starved for air.

PRESSURE VS AIR FLOW
DGT820-00



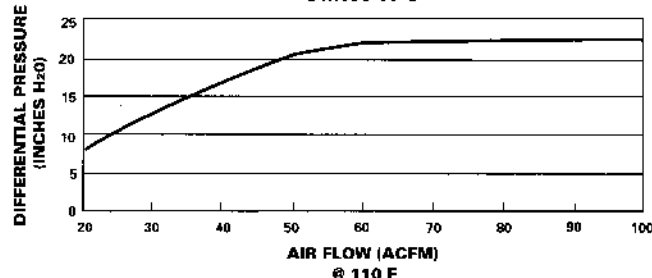
Efficiency dependent upon application
Avg. influent oil content = 3,700 MG/M³

PRESSURE VS AIR FLOW
DGT839-00



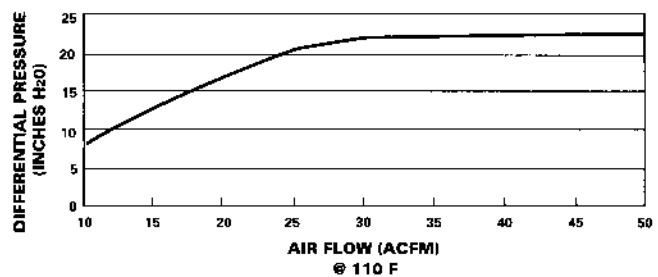
Efficiency dependent upon application
Avg. influent oil content = 3,700 MG/M³

PRESSURE VS AIR FLOW
DM639-00-C



Efficiency > 99.9%
Avg. influent oil content = 5,130 MG/M³
Guaranteed effluent oil content < 5 PPM

PRESSURE VS AIR FLOW
DM620-00-C



Efficiency > 99.9%
Avg. influent oil content = 5,130 MG/M³
Guaranteed effluent oil content < 5 PPM

Sizing Your System:

To place an order for a Hilco Vent Oil Mist Eliminator, you will need to have the following measurements ready:

- Vent size
- Temperature of flow
- Flow rate (ACFM)
- Allowable back pressure and/or vacuum



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FIELD PERFORMANCE DATA

Mist Eliminator Model # : 01ME06-30822101

Package : Dresser Rand DR-61

Compressor Load @ Test Time : 70%

Vent Flow Rate : 66 ACFM

Influent Temperature : 122° F

Effluent Temperature : 84° F

Influent Oil Concentration (After Cooler) : 360 ppm

Average Effluent Oil Concentration : 1.54 ppm

Differential Pressure : 10" H₂O

Service Time : 8 Months

COOLER SPECIFICATIONS

| PERFORMANCE | PROCESS MEDIA SIDE | SERVICE MEDIA SIDE |
|---------------------------------|----------------------------|----------------------------|
| Fluid Circulated | Air/Oil | Air |
| Flow Rate | 240 SCFM | 1,407 SCFM |
| Influent Temperature | 250° F | 100° F |
| Effluent Temperature | 123° F | 122° F |
| Influent Pressure | 15.7 PSIA | 14.7 PSIA |
| Velocity | 2,041 FPM | 1,526 FPM |
| Pressure Loss | 3.6" H ₂ O | 0.9" H ₂ O |
| | | |
| AVERAGE MEDIA PROPERTIES | | |
| Thermal Conductivity | 0.01752 BTU/hr-ft-°F | 0.01580 BTU/hr-ft-°F |
| Specific Heat | 0.24026 BTU/lb-°F | 0.23965 BTU/lb-°F |
| Viscosity | 0.05134 lb/ft-hr | 0.04680 lb/ft-hr |
| Density | 0.06568 lb/ft ³ | 0.06963 lb/ft ³ |
| | | |
| CONSTRUCTION | | |
| Design Temperature | 250 °F | N/A |
| Design Pressure | 78 PSIG | N/A |
| Flow Direction | Horizontal | Vertical Up |
| Coating | None | None |

MATERIALS OF CONSTRUCTION

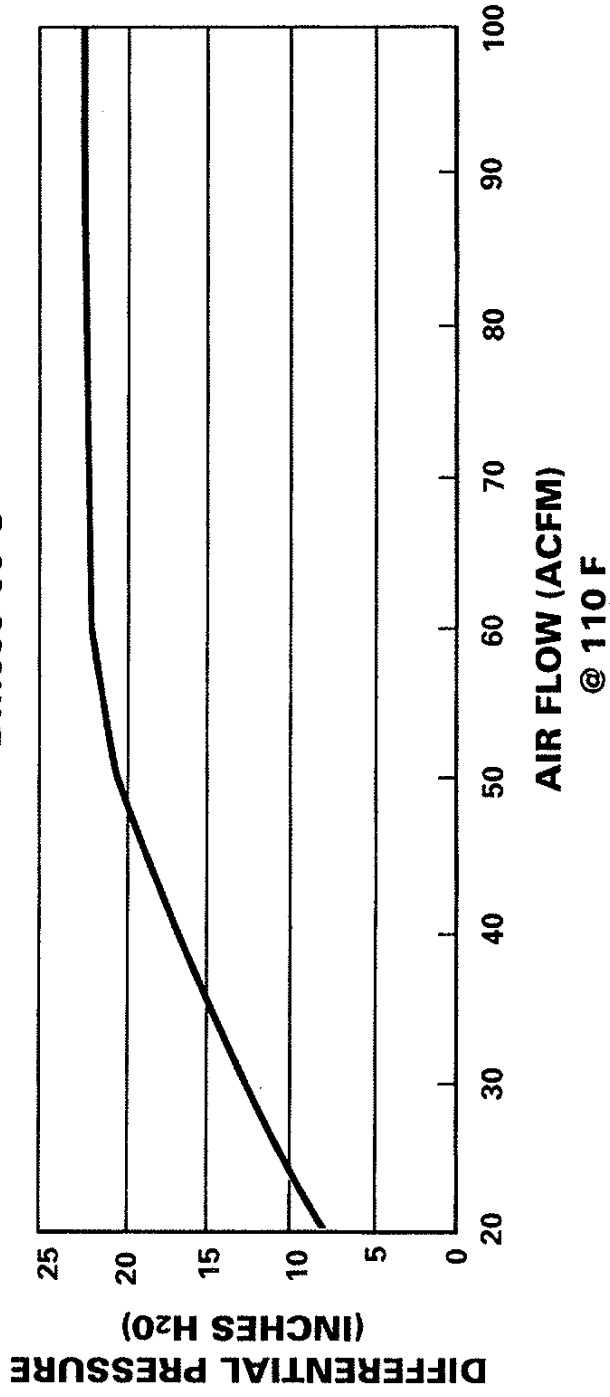
| | |
|---------------------------------|-------------------------------------|
| Plate & Fin Core : Aluminum | Exhaust Hood : Galvanized Steel |
| Fan Guard : Coated Carbon Steel | Venturi Frame : Coated Carbon Steel |

MISCELLANEOUS

| | |
|-------------------------------|---|
| Fan Diameter : 12" | Motor : 3/4 HP Class 1, Division 1&2, Group D |
| Fan Type : 4 Blade Aluminum | Speed : 3,450 RPM |
| Connections : 4"-150# Flanged | Weight : 150 lbs |

PRESSURE VS AIR FLOW

DM639-00-C



HILCO[®] OIL MIST ELIMINATOR

INSTALLATION AND OPERATING INSTRUCTIONS

1. INSTALLATION:

1.0 GENERAL INFORMATION:

- 1.0.1 Read all instructions, attachments, and assembly drawings carefully before installing, operating and servicing your Hilco Oil Mist Eliminator.
- 1.0.2 Upon receipt, inspect the unit for shipping damage. If damage is found, notify carrier immediately.
- 1.0.3 Mount and level filter at desired location. If possible, install the system above the oil reservoir, but allow adequate overhead room for air flow through the inlet cooler.
- 1.0.4 Locate the filter so there is adequate clearance for cartridge removal. Refer to the data sheet or assembly drawing supplied with your filter for the minimum required clearance.
- 1.0.5 Wire motor in accordance with local and national electrical codes to a suitable fused electrical source.

WARNING

BE SURE SYSTEM IS GROUNDED TO A GOOD EARTH GROUND.

WARNING

**BE SURE PRESSURE IN THE FILTER VESSEL IS ZERO
(ATMOSPHERIC) BEFORE LOOSENING COVER.**

1.1 CONNECTING PIPING

- 1.1.1 The connecting piping must be large enough in diameter to handle rated flow without causing an excessive pressure drop.
- 1.1.2 Check that the pipe and connectors are clean and free of dirt and scale.
- 1.1.3 Run inlet line as direct as possible to avoid any oil traps, and to minimize back pressure on the sump.
- 1.1.4 Pipe the outlet to the outdoors as direct as possible. Pipe the line in a manner so no precipitation can enter the line from outdoors.
- 1.1.5 Install a drain line from the mist eliminator back to the reservoir, below the oil level, to allow the unit to continuously drain. It is important that the drain line is piped below oil level to keep oil mist from by-passing the mist eliminator cartridges. If piping the drain to the reservoir is not practical, then the mist eliminator must be drained periodically, into a separate container, to avoid an excess build up of oil in the vessel.
- 1.1.6 Make sure connecting piping and flanges are straight and properly aligned with the filter connections before bolting or welding. Improperly aligned connections may over stress filter connections, or cause leaks.
- 1.1.7 Install a pressure gauge, reading in inches of water, to the inlet piping to monitor the differential pressure across the mist eliminator.

1.2 MIST ELIMINATOR ELEMENTS:

- 1.2.1 After filter assembly has been mounted and all interconnecting piping has been installed, open the filter cover and make sure the mist eliminator elements are properly installed and undamaged. If the mist eliminator elements are not installed see MIST ELIMINATOR ELEMENT SERVICING section.

1.3 VESSEL COVER:

- 1.3.1 Clean cover gasket and gasket sealing surfaces as required. Inspect surfaces for nicks or gasket for damage and proper placement. Replace cover gasket if damaged.
- 1.3.2 Replace cover and tighten bolts securely. Torque bolts using a staggered pattern to insure uniform sealing.

Tighten 1/2" bolts to 20-30 lb.-ft. torque.

1.4 STARTING AND OPERATION:

- 1.4.1 Open inlet valve, if installed, and start system.
- 1.4.2 Check for leaks. If there is a leak, close the inlet valve (if installed) and completely relieve the pressure in the filter before repairing leak.
- 1.4.3 Record differential pressure across the new mist eliminator elements to use in determining when it will be time to replace the elements.

2.0 DESCRIPTION OF OPERATION:

Oil mist generated by engine blow-by is forced into the unit by pressure build up in the oil reservoir. This unit is equipped with an air to air heat exchanger to cool the inlet gasses before they enter the filter housing. As the inlet gasses are cooled, any oil vapor present in the inlet stream condenses into tiny oil droplets. Then the oily mist is pushed into the filter housing, and through the mist eliminator elements trapping the oil droplets in the elements. The oil droplets then combine and fall to the bottom of the housing. The purified, oil free air, then proceeds out of the unit to the atmosphere.

MIST ELIMINATOR ELEMENT SERVICING:

3.0 WHEN TO CHANGE ELEMENTS:

- 3.0.1 As a minimum, the elements should be changed when the differential pressure drop reaches the recommended value above the clean (new) element pressure drop, or every twelve months, whichever occurs first.
- 3.0.2 Mist eliminator elements may be changed more frequently if desired.
- 3.0.3 If there is no information available indicating when to change the mist eliminator elements, then change the elements when the differential pressure drop reaches 30 inches H₂O above the recorded clean pressure drop, or every twelve months, whichever occurs first.

3.1 MIST ELIMINATOR ELEMENT REMOVAL:

- 3.1.1 Stop system.
- 3.1.2 Close inlet valve if installed.
- 3.1.3 Bleed off all pressure in vessel. If a continuous drain is not installed, make sure the vessel is completely drained before opening cover.
- 3.1.4 When pressure gauge reads zero the filter may be opened. Loosen cover bolts and remove cover.

WARNING

**BE SURE PRESSURE IN THE FILTER VESSEL IS ZERO
(ATMOSPHERIC) BEFORE LOOSENING COVER.**

- 3.1.6 Remove and discard cover gasket.

NOTE: Hilco recommends replacing the cover gasket at every element change. This prevents the necessity of shutting down the system before the next regularly scheduled maintenance just to change the gasket. In an emergency, the old cover gasket can be reused if it is not hard or damaged.

- 3.1.7 Loosen the thumb screw at the end of each cartridge. Remove cartridge hold down assembly. DO NOT DISCARD.

- 3.1.8 Remove mist eliminator elements. Take precautions to avoid damaging cover sealing surface, and the filter sealing surfaces inside the filter housing.

3.2 MIST ELIMINATOR ELEMENT INSTALLATION

- 3.2.1 Determine the type of mist eliminator element you have in the filter.

3.2.1.1 Type DM639-00-C: Throwaway synthetic cartridges with a built-in support core in each cartridge. Discard all used cartridges, and install the same number of new ones on filter housing center post. Make sure an o-rings is in place at the open end of the cartridge

3.2.1.2 Type GDT839-00: Throwaway fiberglass element. Discard all used cartridges, and install the same number of new ones on filter housing center post. Make sure an o-rings is in place at the open end of the cartridge

Only use genuine HILCO[®] replacement cartridges.

- 3.2.3 Insert mist eliminator elements into vessel . Take precautions to avoid damaging the cover sealing surface, and the filter sealing surfaces inside the filter vessel.

- 3.2.4 Install cartridge hold down assembly. Tighten the thumb screw at the end of each of the mist eliminator cartridges to secure in place.

- 3.2.5 Clean cover gasket sealing surfaces as required. Inspect surfaces for nicks or scratches. Install new cover gasket. Inspect gasket for damage and proper placement.

- 3.2.6 Replace cover and tighten bolts securely. Torque bolts using a staggered pattern to insure uniform sealing.

Tighten 1/2" bolts to 20-30 lb.-ft. torque.

- 3.2.7 Open inlet valve, if installed, and start system.

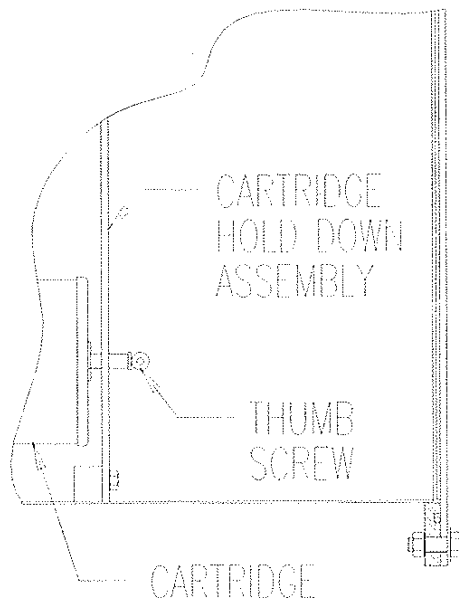
- 3.2.8 Check for leaks. If there is a leak, close the inlet valve (if installed) and completely relieve the pressure in the filter before repairing leak.

- 3.2.9 Record differential pressure across the new mist eliminator elements to use in determining when it will be time to replace the elements.

4. CARTRIDGE HOLD DOWN ASSEMBLY:

4.1 CARTRIDGE HOLD DOWN INSTALLATION:

- 4.1.1 Inspect cartridge hold down assembly to ensure it is clean, and the thumb screws turn freely.
- 4.1.2 Check cartridges to be sure there is an o-rings in the open end of the cartridge.
- 4.1.3 Check cartridge to make sure that it is properly installed on the vessel center post, and that the o-ring is sealed on the center post.
- 4.1.4 Once all of the cartridges are in place, install the cartridge hold down assembly in the filter.
- 4.1.5 Tighten the thumb screws, until they comes in contact with cartridge, to secure cartridges in place.
- 4.1.6 Check cartridge to make sure it has not moved, and are still aligned.
- 4.1.7 Replace vessel cover.



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Revision Level:
Date of Revision:

2508-00-012-A
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