# Case Study Application Report

**Elimination of Oily Mist from Draw Furnaces in Metal Parts Heat Treating**

**HILCO Oil Mist Eliminator**

## THE PROBLEM

Advanced Heat Treating is a powdered metal parts manufacturer located in the eastern United States. The company operates three draw furnaces in their manufacturing process. An oily mist is present in the discharge duct lines from the draw furnaces. Currently, this mist is being incinerated which requires an abundant amount of natural gas. Not only is the environment being affected, but the monthly expense of disposing the oil is costly.

## THE SOLUTION

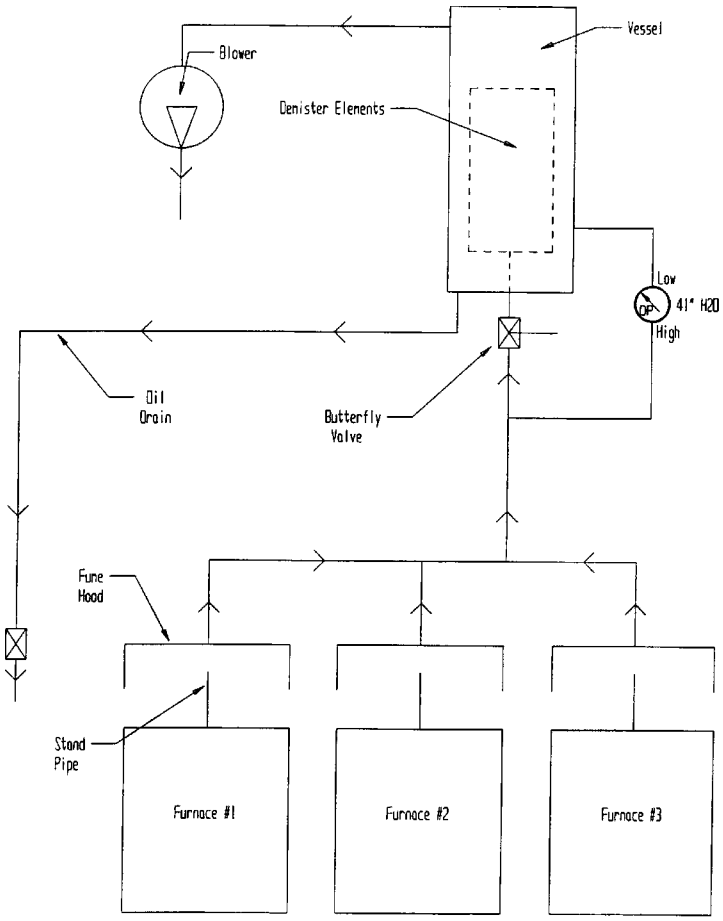
The HILCO Vent Mist Eliminator has been designed to virtually eliminate the oil mist present in the duct lines. Since all three furnaces may be running at full capacity at the same time, Hilliard has designed the VME for 900 CFM. This model can extract oil mist from the furnaces at a flow rate of 900 CFM. If the actual flow from the furnace is less (which will almost always be the case) the extra capacity is drawn in through the hoods and aids in cooling the air stream. This configuration can also evacuate the smoke created in the hood when parts are being removed.

## THE RESULTS

Advanced is capturing 15-20 gallons/day from the three draw furnaces. They give the oil to a local company that uses it for automotive lubrication, saving disposal costs. This savings paid for the Vent Mist Eliminator in less than three months!

## How the Hilco Oil Mist Eliminator Works for AHT

Three furnaces are positioned alongside each other so that exhaust can be processed through one demister. The furnaces are equipped with a fume hood to capture the oily smoke from parts as they are removed from the furnace. These hoods are manifolded together into a common exhaust pipe which is connected into the inlet of the oil demister. The oil-laden air is drawn through the demister elements by a high-capacity blower. An inlet-flow regulating butterfly valve is utilized to maintain proper flow through the system. This valve only requires adjustment after the unit is installed or after a set of elements has been replaced. The operator adjusts the valve accordingly until the elements fully saturate with oil. After the elements saturate, oil is returned through the drain line. Virtually oil-free air is exhausted from the Hilco unit.




**The Hilliard Corporation**
100 West Fourth Street
Elmira, NY 14902-1504
Phone: (607) 733-7121
Fax: (607) 737-1108
http://www.hilliardcorp.com

Hilliard HILCO® DIVISION