

HIGH VACUUM VAPOR DEGREASERS

Project Description

High Vacuum Vapor Degreasing (HVVD) is a cleaning technology in which solvent cleaning is performed within a vacuum chamber. By not allowing solvent and air to mix, HVVD technology does not suffer from the problems associated with conventional open top vapor degreasers. For example, HVVD cleaners do not require the extensive cooling coils contained within conventional degreaser to remove solvent from air and are therefore more energy efficient. Additionally, because the cleaning occurs in a closed vacuum system, the only losses of solvent are the small puffs that occur when the chamber is opened and minor quantities in still bottoms. These units are extremely efficient users of solvent and require up to 90% less input solvent. The major drawback to this technology is the high, up-front capital expense.

HVVD technology allows for continuation of the use of solvent in M&C Core Processes for which a suitable non-solvent technique has been not developed. Because of the availability of this technology, the M&C businesses were not adversely impacted by Clean Air Act restrictions on solvent cleaners. Solvent use has been greatly reduced over previous year's usage related to the replaced conventional vapor degreasers.

Energy and Cost Savings

As a result of this project, energy costs are reduced by \$12,000 annually. In addition, chemical cost savings total \$61,500 annually, waste disposal cost savings total \$8,000 annually, avoided compliance costs total \$16,000 and estimated avoided permitting costs total \$14,000.

Environmental Benefits

The primary environmental benefit of this program is the reduction of solvent use and emissions. HVVD technology is not subject to the Subpart T NESHAP requirements for Halogenated Solvent Cleaners; thus, reducing the annual compliance costs per degreaser (estimated to be approximately \$8K greater per unit over what is currently being allocated). Additionally, Since HVVD technology uses solvent in such small quantities; these units can be permitted in Massachusetts under the small cleaner (i.e., monthly solvent consumption of less than 100 gallons per month) exemption.

<u>High Vacuum Vapor Degreasers</u>	
Total Capital Costs	\$
Energy Cost Savings	\$12,000/year
Chemical Cost Savings	\$61,500/year
Avoided Compliance Costs	\$16,000
Avoided Solvent Use	