



Etched Conical Through Holes Media

by Jeff Bjork

VACCO Industries of South El Monte, California is producing PhotoPore™, a photo etched metal perforated screen that has drastically improved the flow rates and entrapment issues of many worldwide filtration needs. Through the use of PhotoPore's etched conical shaped through holes, in a cross sectional view, filtering productivities have increased and total lower costs have been accomplished.

With the opportunity of having conical flow through holes, customers have improved their product flow rates while still keeping or improving the precise media opening size they require. Custom shaped holes, as small as 60um, and specific open area percentages are produced to meet each individual's need. Metal and Polyimide materials can vary in thickness from .0002" to .1250" to meet the customers' particular desires. Another note is the bevel of these conical shaped features can vary in point of distance from material surface to bevel through hole location creating additional advantages to the exact requirement. These bevel point locations can be used for a variety of advantages.

As if the improved flow rates were not enough, the conical holes through single plain material can also help with the dilemma of particle entrapment. With the photo chemical etching process a burr free single plainer media exist making for easier clean-

ing methods and back flushing to occur. Many customers comment on how much easier their cleaning concerns have become since changing to VACCO's etched perforated screens. No longer do they worry about the issue of particle entrapment they can have between woven wires.

And yet another advantage to using VACCO photo etch process are the screens can be custom made with proper borders and alignment & tooling holes already in place to aid with installation at each companies particular application. No secondary processes, such as cutting or shearing the media to fit the application are required. With the photo etched process it is all manufactured and duplicated in one operation and even better there are no loose wire ends that can create a whole world of issues themselves for many applications. Some of these negative issues include; frayed edges, movement of the wire positions, changing of the open area, and product life. **Continued on Page**

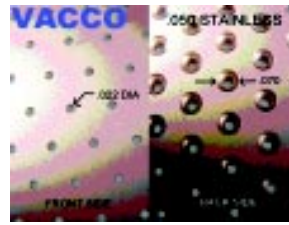


Photo shows the front & back side of a conical etched hole. These "funnel" type shaped through holes have proved to be advantageous for a number of filtering applications.

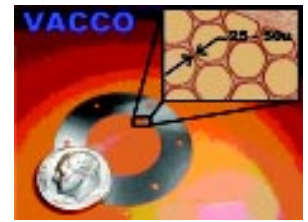


Photo shows a filter with small wire struts of less than .002" width and high open percentage of over 90%

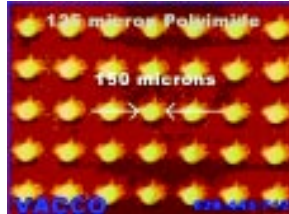


Photo shows that etched holes of ~.006" diameter through polyimide material of .005" thickness.

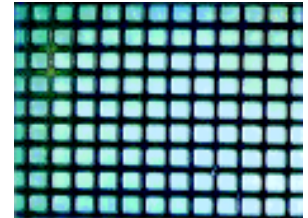


Photo shows etched holes through an alternative material of Molybdenum.

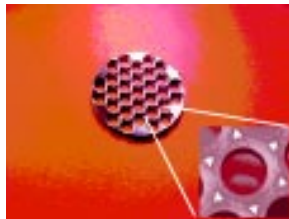


Photo shows that in using the photo etch process you can achieve both through holes & blade tips for potential other requirements & applications.



Photo shows many different potential patterns you could use in using the "differential" photo etching method of Vacco.



Photo shows that photo etched parts can be extremely small to meet the many different requirements in filtering needs.



Photo shows stainless steel screen of over 60" length.



Photo shows a cross section view of a conical through hole.

Photo etching has low initial tooling costs for the customize screen(s) and many times VACCO will already have the required tooling in-house to produce the desired hole pattern many are looking for. PhotoPore™ and custom designed filter screens can be inquired/found by communicating directly to VACCO. The sizes of screens can vary from smaller than an eraser head to larger than a table top, and as well; volumes produced can be from one piece to millions of pieces. The process allows for the customer to get what they want.

VACCO photo etched screens give a wide range of flexibility to meet a wide range of filtering requirements. Meeting the individual need of each requirement is what VACCO's photo etching accomplishes.

For further information regarding VACCO visit their website of www.vacco-etch.com or contact the Author, Jeff Bjork, Product Development, Vacco Industries, Ph# 626-450-6428, Fx# 626-350-0533.
