mott corporation

Did You Know...

Mott diffusers reduce vent times AND filter particles?

Semiconductor Industry – Gas Filtration Update

You probably know that Mott provides all-metal point-of-use and bulk filters designed exclusively for high-purity applications. After all, Mott's Porous Metal has been in the field for more than 45 years now. But filtration isn't the only thing we do. We also manufacture **Mott GasShield® Diffusers** to control and optimize gas flow.

Gas Diffusion

Mott GasShield® Diffusers

The ideal solution for optimizing gas flow

In the semiconductor industry, the wafer chamber is a volatile environment. Particles within the chamber can contaminate a wafer's surface if purge cycles are not introduced properly. Mott GasShield® Diffusers are designed to maximize required flow while minimizing pressure drop, resulting in a uniform diffusion of gas that will not disturb particles in the chamber. Some Mott diffusers also offer exceptional filtration by providing up to 9LRV (99.9999999%) reduction in particles down to 0.003µm. This combination of uniform flow and filtration make Mott GasShield Diffusers the superior product of choice.

Centering Ring Diffusers

Semiconductor manufacturers understand that, in order to increase through-put and retain the cleanliness of their wafer environments, consistent and optimum qualities are required from their component manufacturers. Mott Corporation supplies the industry with highly efficient and consistently performing all-metal gas filters, flow restrictors and diffusers.

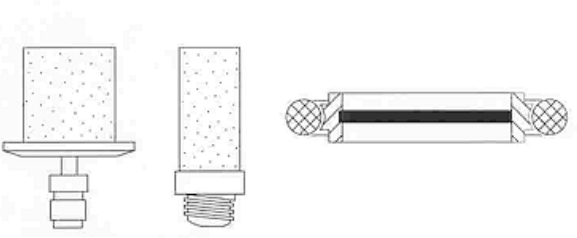
Mott Vacuum Flange Diffusers

Mott high purity diffusers are a simple means of increasing through-put of a tool without compromising yield. GasShield® Diffusers can greatly reduce 'vent' time of the load lock chamber without the adverse 'jet' effect seen through showerheads and standard ¼" inlet lines. Integration of Mott diffusers has been analyzed to reduce venting time of load locks by 75%. In some cases, this has meant an increased throughput of 10-15%.

Mott GasShield Diffusers (GSE Series)
9LRV Filtration

Designs to match your application – Mott porous all-metal gas diffusers are available in 316LSS, Hastelloy® C-22, and nickel with a wide variety of nominal pore sizes from 0.2 to 40µm. By mating the correct nominal pore size, material thickness and diffuser geometry, you can optimize the gas flow for any variation of pressure differentials.

Common Diffuser Configurations



Vacuum flange Face seal Centering Ring (Cross-section)

- **Additional benefits** include:

  – Back pressure can be utilized to ensure proper gas blending

  – Temperature ratings up to 450°C

  – Inherently strong, non-flexing media

Centering Ring (left), Vacuum Flange (top right),
and GasShield (bottom right) Diffusers

Class 100 manufacturing and packaging

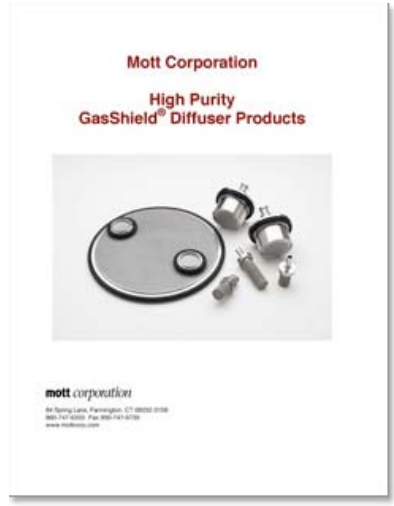
Mott manufacturing methods reduce any potential contamination from moisture, hydrocarbons, oxidation and particles. We manufacture and test our diffusers in a Class 100 clean room environment. And to ensure high out-of-box quality even further, diffuser packaging includes a Nylon 6 inner bag with clean polypropylene outer bag – for a double layer of protection against contaminants.

Mott Corporation – the all-metal pioneer

Founded in 1959, Mott was the first company to introduce porous metal media to semiconductor manufacturing – in 1989. We are an ISO 9001-2000 certified company offering worldwide sales and support, all of which is focused on providing standard and custom-engineered solutions based on Mott porous metal and fiber metal media.

For more information

Click on the image below to download our 4-page GasShield Diffuser Products brochure. You may also contact us at High Purity Sales, Mott Corporation, 84 Spring Lane, Farmington, CT 06032, 1-860-747-6333 or Toll-Free 1-800-BUY-MOTT. E-mail: quest@mottcorp.com.



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