

IN-TANK/STATIC SPARGER INSTALLATION AND OPERATION NOTES

OVERVIEW

The in-tank/static sparger element allows introduction of tiny bubbles into an agitated or non-agitated body of liquid. The bubbles are produced by forcing gas through micron sized holes in the Mott porous metal element. Porous metal, while quite strong, can be damaged by abrasion, contact with a hard object and contaminants. The effect of the damage and contamination is to close surface pores that will reduce gas flow through the porous media.

TAKE THESE PRECAUTIONS

- Handle the element with clean, oil free hands or clean gloves
- Do not rub the element across hard edges during installation
- In aqueous application, prevent the use of oil on the porous metal. Oils have a great affinity for porous metal and is difficult to remove with compressed gases
- Ensure that the gas is filtered to the Media Grade of the element
 - Mott Media Grade 2 (2 micron nominal)
 - Mott Media Grade 5 (5 micron nominal)

INSTALLATION NOTES

The element inlet should be fitted with a suitably sized gas pressure gage, check valve, shut off valve, flow meter, flow controller, pressure regulator, and filter.

Dissolved gas monitors are recommended in the body of liquid to aid in monitoring the gas levels.

Prior to any liquid flow, a low pressure pneumatic leak test should be performed prior to start-up.

Note: Gas flow should be maintained at all times when there is liquid present. Always start gas flow before introducing liquid. Do not stop gas flow until liquid is no longer present. This prevents liquid backflow through the porous element, which could result in fouling of the element.

After start-up adjust the gas flow to achieve the desired mixing results and continually monitor the process and gas flows.



Sparging Process

TROUBLESHOOTING

Insufficient Gas Flow:

- Undersized gas regulator or supply. Gas system should have sufficient capacity.
- Low gas pressure. Gas pressure should be greater than the liquid system pressure and pressure drop of the gas through the element.
- Liquid system pressure is too high. Liquid pressure should be lower than gas pressure plus the pressure drop of the gas through the element.
- Plugged element. If increasing gas pressure does not increase gas flow substantially, the element may be plugged. In this case the element should be removed and cleaned.

Ineffective Gas/Liquid Mixing:

- Insufficient gas flow and gas pressure. See notes above.
- Ineffective placement of sparger element(s). Repositioning may be required.