

Wicking and Pumping

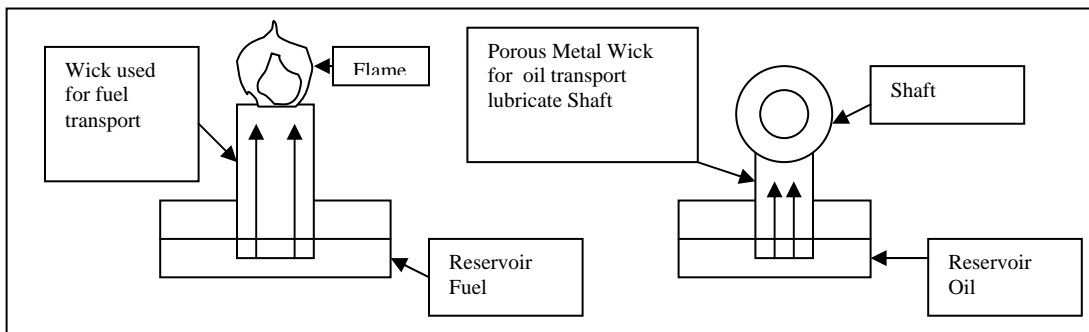
Over the years porous metal has evolved into many hard to solve process problems. One of these is in the use of pumping and or wicking. Mott's porous sintered metal is the perfect fit for many of these applications from aerospace to consumer use.

Wicks

The structure of porous metal with a very uniform porosity will pump a liquid from a reservoir of fluid through the porous metal structure and apply the liquid to the desired location. Capillary action takes place within the porous structure due to the uniform pore distribution and pore size; this results in a hydrophilic material.

Benefits in using porous metal for wicking

- No moving parts
- Long maintenance free service life
- Cleanability
- Provide uniform flow
- Continuous operation
- High strength, shock impact resistance
- High temperature tolerance
- Filtration, provide clean fluid to application



Sintered metal used for pumps in liquid cooling systems

Porous metal can also be used in a closed recirculating system. The porous material acts as the main pump in this system. The system works on the same principle as the wick, the difference is the system is totally enclosed. Pump head pressure on this system can reach as high as 30" H₂O, with this kind of performance porous metal is suited to a large range of cooling applications.

Examples of Cooling Applications

- Aerospace
- Satellites
- Astronauts space suit cooling
- Microelectronics

Power Electronics

- Switches
- Rectifiers
- Reactive elements
- Transformers

