

NASA TECH BRIEF

Ames Research Center

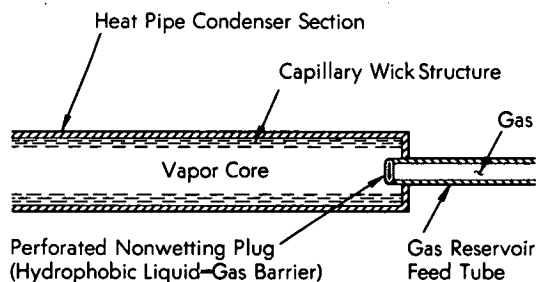


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Hydrophobic Liquid/Gas Separator for Heat Pipes

The problem:

To prevent liquid from entering the gas reservoir of a passively controlled heat pipe.



The solution:

Place a nonwetting plug in the reservoir entrance.

How it's done:

A perforated nonwetting plug of a material such as polytetrafluoroethylene is mounted in the gas reservoir feed tube, preferably at the end which extends into the heat pipe condenser section, as indicated in the diagram. Such a device acts as a barrier which

has the unique property of allowing gas and vapor at small pressure differentials to flow nearly unimpeded through it, while hindering the flow of nonwetting liquids. A perforated plug is preferable to a permeable membrane, because the resistance to gas flow through a membrane is several orders of magnitude too high for the transient response expected of a passively-controlled heat pipe.

Note:

No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer
Ames Research Center
Moffett Field, California 94035
Reference: B72-10549

Patent status:

No patent action is contemplated by NASA.

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Category 03