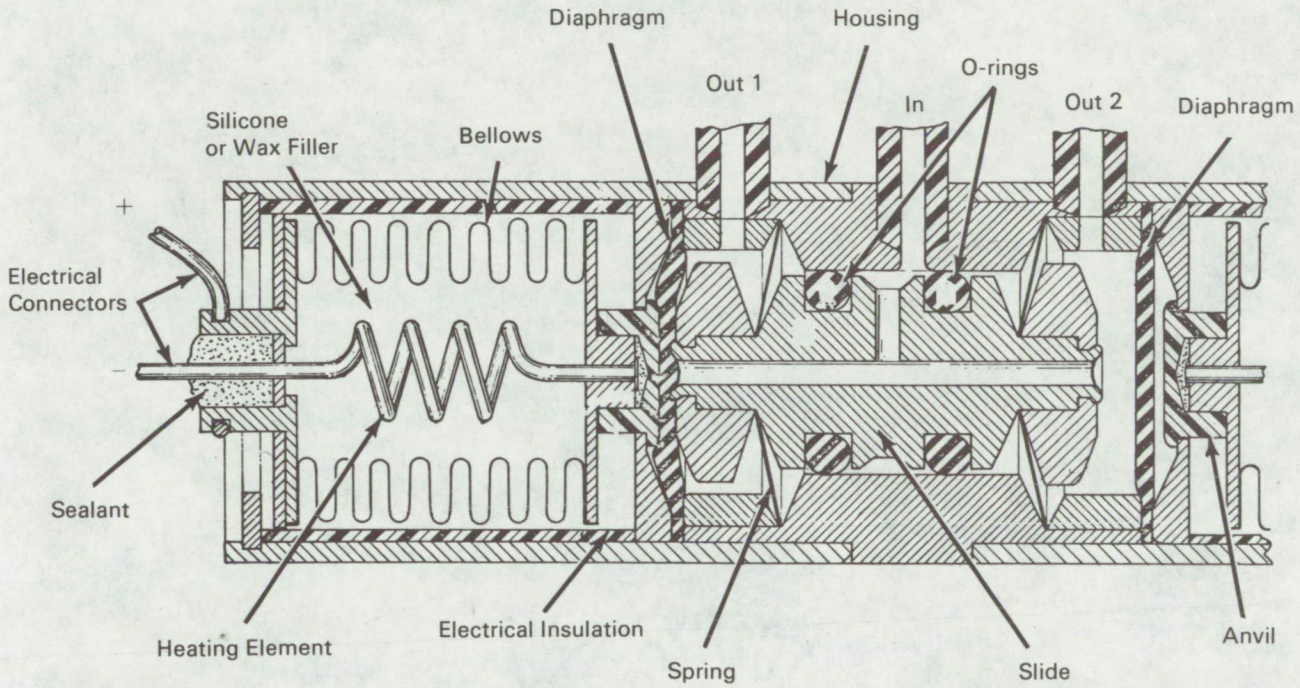
# NASA TECH BRIEF



## An Electrothermally Actuated Micro Valve




Cutaway Drawing of Micro Valve

The device described in this Tech Brief is a microminiature valve which requires power only during actuation and can be used as an on-off or single inlet to alternately selected outlets.

The innovation consists of a slide action valve (see figure) housed between two-way bellows assemblies. The figure illustrates a valve with one inlet and two outlets, although the configuration lends itself to multi-port designs. The slide is held to the left or right by Belleville springs, and at each end there is a diaphragm which is pressed between the end of the slide and the anvil (dependent upon which direction the slide was last pushed).

Electrical current applied to the conductor and bellows will cause the wax to expand and push the anvil against the diaphragms until the springs snap over center. This action causes the slide to move until the right end seats against the diaphragm at the right end of the valve and stops flow at outlet 2 (flow at outlet 1 continued).

(continued overleaf)

## Notes:

1. The information contained in this Tech Brief may be of interest to personnel working with gas or liquid control gas chromatographs.
2. No additional documentation is available. Specific questions, however, may be directed to:

   Technology Utilization Officer
   NASA Pasadena Office
   4800 Oak Grove Drive
   Pasadena, California 91103
   Reference: B70-10171

## Patent status:

No patent action is contemplated by NASA.

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