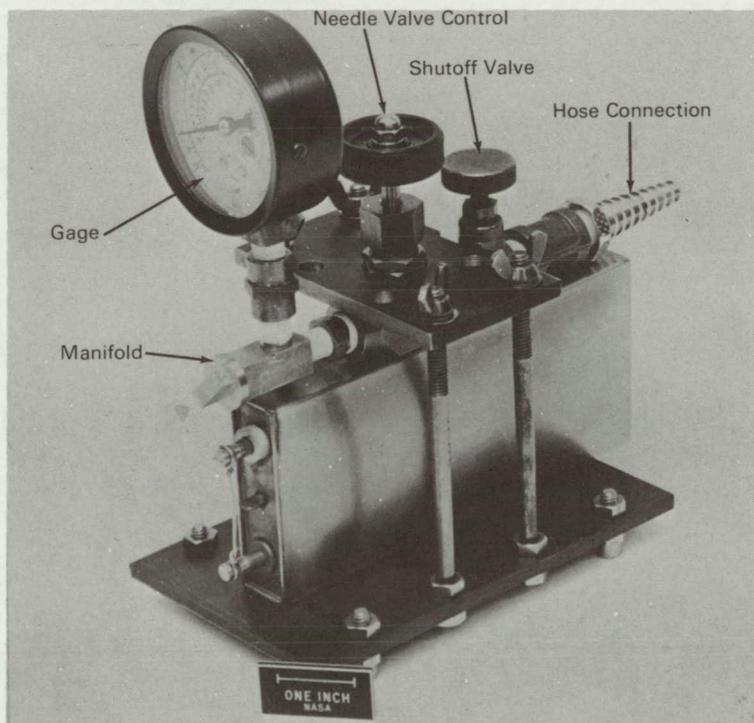


NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

Sealed Container Sampling Device



Sampling Device in Operating Position

The device described in this brief has a wide variety of applications in the chemical, preservative, and battery-manufacturing industries.

The heart of the device is a precisely tapered needle valve that pierces a sealed container while maintaining the seal. The needle valve is capable of penetrating a variety of materials from plastics to 0.032 stainless steel.

The sampling device can be used either to evacuate or pressurize the internal portion of the container.

The evacuation procedure is performed as follows: (refer to illustration)

- a. Clamp the container in place, positioned so that the needle valve will penetrate the container at the desired point.
- b. Connect a vacuum pump to the hose connection.
- c. Open shutoff valve and evacuate the manifold for a gage indication of 30 inches.
- d. Close shutoff valve and observe gage for a few minutes to ensure that there are no leaks.

(continued overleaf)

e. Effect the container puncture by alternately advancing and backing the modified valve handle 1/2-turn per cycle. The penetration is indicated by loss of vacuum.

To obtain a sample from the container, remove the manifold top, insert a hypodermic needle through the membrane, fill the syringe then replace the manifold top.

To pressurize the container:

- a. Perform previously listed steps a through e.
- b. Disconnect the vacuum pump from the hose connection.
- c. Connect a cylinder of the desired gas to hose connection.
- d. Open shutoff valve and pressurize container to the desired pressure.

Notes:

1. Standard safety precautions must be observed when using pressurizing procedures.
2. The sampling device is fabricated of parts with standard pipe fittings.
3. No additional documentation is available. Specific questions, however, may be directed to:
Technology Utilization Officer
Goddard Space Flight Center
Greenbelt, Maryland 20771
Reference: B69-10682

Patent status:

No patent action is contemplated by NASA.
Source: Thomas J. Hennigan
Head, Electrochemical Power Sources Section
Goddard Space Flight Center
(GSC-10690)