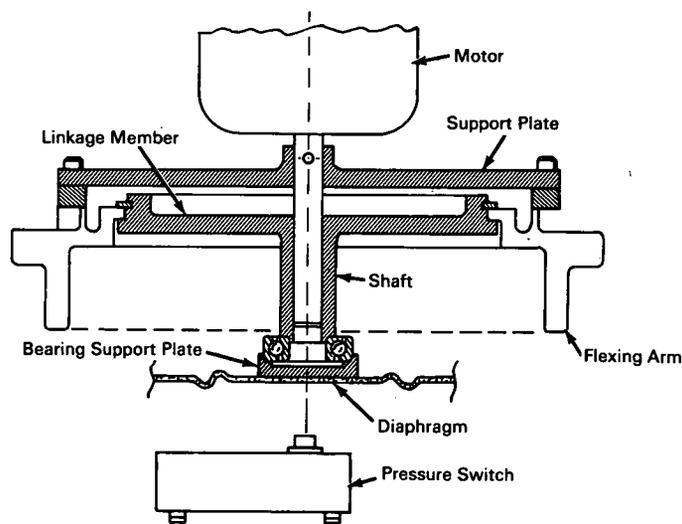


# NASA TECH BRIEF



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## Flexible Arms Provide Constant Force for Pressure Switch Calibration



### The problem:

To devise a system of in-place calibration of a pressure switch. The system must generate a known constant force that can be applied to the switch diaphragm.

### The solution:

A system of radially oriented flexing arms which, when rotated at a known constant velocity, will convert the centrifugal force on the flexing arms to a linear force along the shaft of the apparatus. This linear force, as applied to a pressure switch diaphragm, can be calculated.

### How it's done:

A motor rotates the complete support plate, flexible arm, and linkage mechanism at a constant angular velocity. Because of centrifugal force, the flexing arms

are forced outward. This force is transmitted through the linkage member along the shaft to the bearing support plate. The bearing support plate is in contact with the pressure switch diaphragm.

If the angular velocity of the motor and the mass of the flexing arms are known, the force transmitted by the linkage member to the diaphragm can be calculated. This calculated force is then used to calibrate the pressure switch.

### Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer  
 NASA Headquarters  
 Washington, D.C. 20546  
 Reference: B66-10317

(continued overleaf)

**Patent status:**

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: D. E. Cain and R. W. Kunz  
of General Electric Company  
under contract to  
NASA Headquarters  
(HQ-38)