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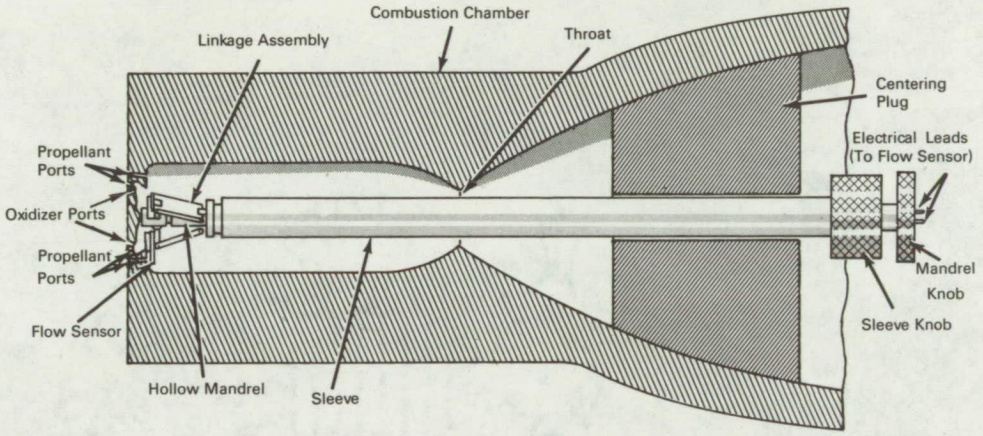
Brief 67-10074

NASA TECH BRIEF

Flow-Test Device Fits Into Restricted Access Passages



The problem:

To design a test device that will enable a fluid flow sensor to be properly positioned with respect to fluid (propellant and oxidizer) injector orifices, or ports, located at the end of a restricted passage in the combustion chamber of a rocket motor.

The solution:

A device incorporating a mandrel with a collapsible linkage assembly which can be inserted through a restricted passage (combustion chamber throat) and externally manipulated to position a fluid flow sensor (e.g., resistance thermometer) in proper relation to the flow port to be checked.

How it's done:

The collapsible linkage assembly, at the forward end of the hollow mandrel, carries three expandable support fingers which are uniformly spaced about the periphery of the mandrel. One of these fingers carries the flow sensor; the other fingers serve as support and positioning means. The mandrel, which is threaded to the inner circumference of the sleeve, can be rotated (by holding the sleeve knob with one hand and rotating the mandrel knob with the other hand) to expand the linkage after it has been inserted through the throat of the motor to position the sensor over one of the flow ports. Once the flow in a particular port has been checked, the entire device can be rotated to align the sensor with each of the other ports in sequence. To remove the device, the mandrel is rotated in the opposite direction with respect to the sleeve to collapse the linkage, and the device is easily withdrawn through the throat.

Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Manned Spacecraft Center
Houston, Texas 77058
Reference: B67-10074

(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.

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