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NASA TECH BRIEF

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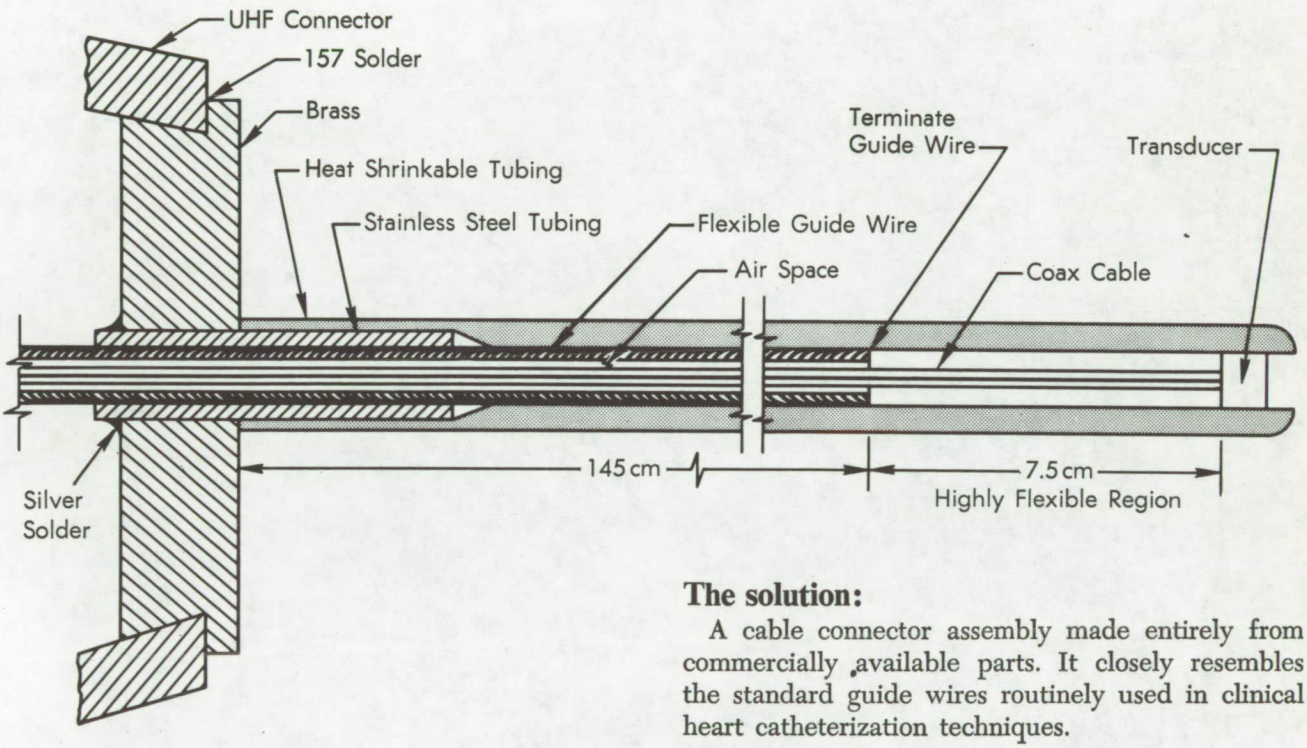
Heart Catheter Cable and Connector



The problem:

To construct rugged, ultraminiature catheter cables that are stiff enough for intravenous insertion yet flexible at the tip, sterilizable, and economical to fabricate. Moreover, the cables must include an air passageway for reference pressures and a coaxial cable for transmission of signals from the tip of the catheter.

The solution:

A cable connector assembly made entirely from commercially available parts. It closely resembles the standard guide wires routinely used in clinical heart catheterization techniques.

How it's done:

A flexible guide wire of spring steel provides a strong, uniform body onto which fluoroplastic shrinkable tubing can be collapsed. The inside dimension of the guide wire has sufficient room to house a coaxial cable and to provide an air passageway. The fluoroplastic tubing protects the cable and transducer case from ingress of body fluids and permits chemical-type or autoclave sterilization as long as the opening at the connector is sealed off.

(continued overleaf)

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The assembly has the necessary overall stiffness to function effectively as a catheter. Flexibility at the tip is obtained because the guide wire is terminated 7.5 cm behind the transducer; the tubing and the miniature coaxial cable thus constitute the tip of the catheter and the assembly provides the flexibility needed to permit bending the cable tip to an appropriate curvature prior to insertion.

A standard UHF connector was modified to provide a logical termination for the catheter cable; a short length of metal tubing attached to the connector permits applying pressure to the catheter.

Note:

Requests for additional information may be directed to:

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Reference: TSP 72-10200

Patent status:

No patent action is contemplated by NASA.

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