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# NASA TECH BRIEF



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## Miniature Multicontact Connectors

### The problem:

Testing four-stage integrated ferrite logic structures (Fig. 1) requires that many conductors be passed through the complex structure geometry, and that as many as four conductors pass through a hole with a

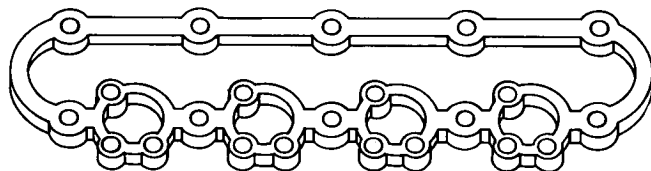


Figure 1. Four-Stage Integrated Ferrite Logic Structure

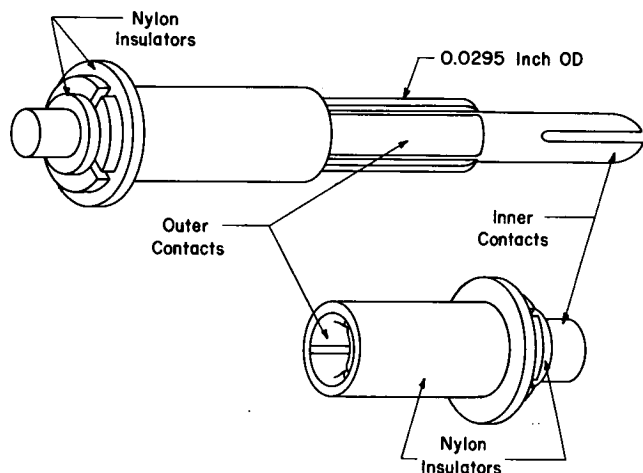


Figure 2. Assembled Male and Female Connectors

minimum diameter of 0.030 inch. These requirements could not be satisfied by conventional mechanized core testing techniques. Attempts to test the structures by intricately winding each circuit with 33 gauge wire proved to be time consuming and destructive to the structures.

### The solution:

Utilize a new miniature multicontact (Figure 2) connector, which has at least four (4) and as many as nine (9) contacts, and can be engaged through a hole with a minimum diameter of 0.030 inch (Figure 3).

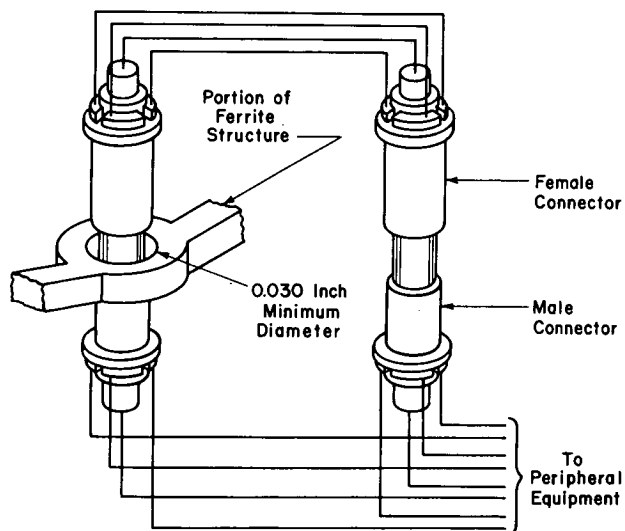


Figure 3. Typical Application

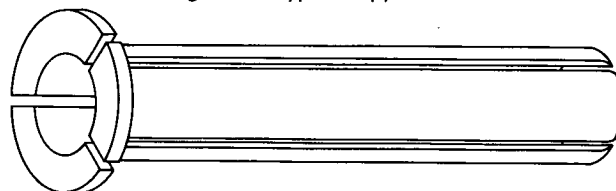


Figure 4. Typical Connector Outer Contacts

### How it's done:

Male and female connectors are constructed of concentric brass and nylon components assembled with a light, firm press-fit. The connectors are press-fit in-

(continued overleaf)

stalled in a mounting plate in an array suitable for testing one stage of an integrated ferrite logic structure.

The three outer contacts of both male and female connectors (Figure 4) are formed by longitudinally slitting a hollow brass cylinder. The inner contact of the male connector is partially slit to ensure secure mating. In both the male and female connectors, tubular nylon insulators separate the inner and outer contacts and insulate the connector from the mounting plate.

The miniature connectors are designed to withstand several thousand mating cycles, and each outer contact has a current carrying capacity of one ampere.

**Note:**

Requests for additional information may be directed to:

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Hampton, Virginia 23365  
Reference: TSP70-10724

**Patent status:**

No patent action is contemplated by NASA.

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