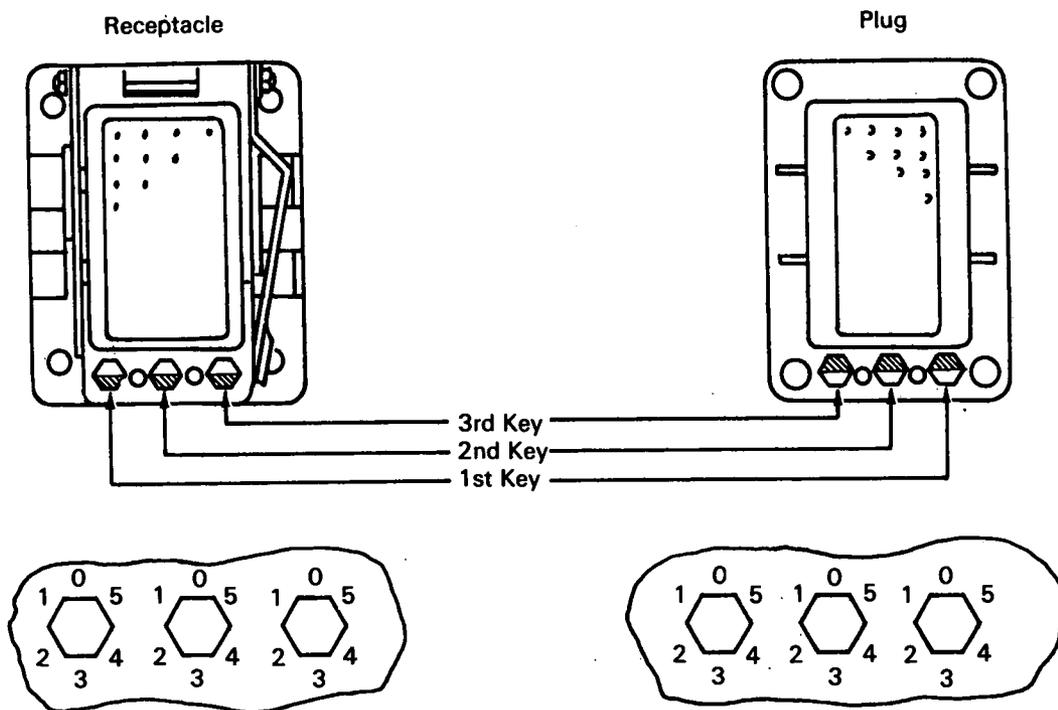


NASA TECH BRIEF



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Polarizing Keys Prevent Mismatch of Connector Plugs and Receptacles



The problem:

In connector patching for instrumentation involving several thousand leads, the danger of mating the wrong plug and receptacle is always present. Improper mating can result in expensive delays, system malfunction, and even catastrophic failure.

The solution:

Connectors consisting of plugs and receptacles having keying provisions that permit the mating of a large number of connectors with no possibility of a mismatch. The back of the receptacle provides two sockets for patching to each individual plug lead.

How it's done:

Each receptacle and plug contains three polarizing keys that must mate in a complementary mode before the connector pins and sockets will engage. Each of the three keys in each unit may be oriented in any one of six selected positions. This provides a total of 216 different keying arrangements. Since each receptacle provides 128 patch sockets, the system will accommodate a total of 27,648 patch leads with no possibility of any plug-to-receptacle mismatch.

Notes:

1. This plug and receptacle system should be of use

(continued overleaf)

wherever complex test instrumentation must be frequently reconnected.

2. Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Manned Spacecraft Center
Houston, Texas 77058
Reference: B66-10251

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: A. Chiapuzio
of North American Aviation
under contract to
Manned Spacecraft Center
(MSC-443)