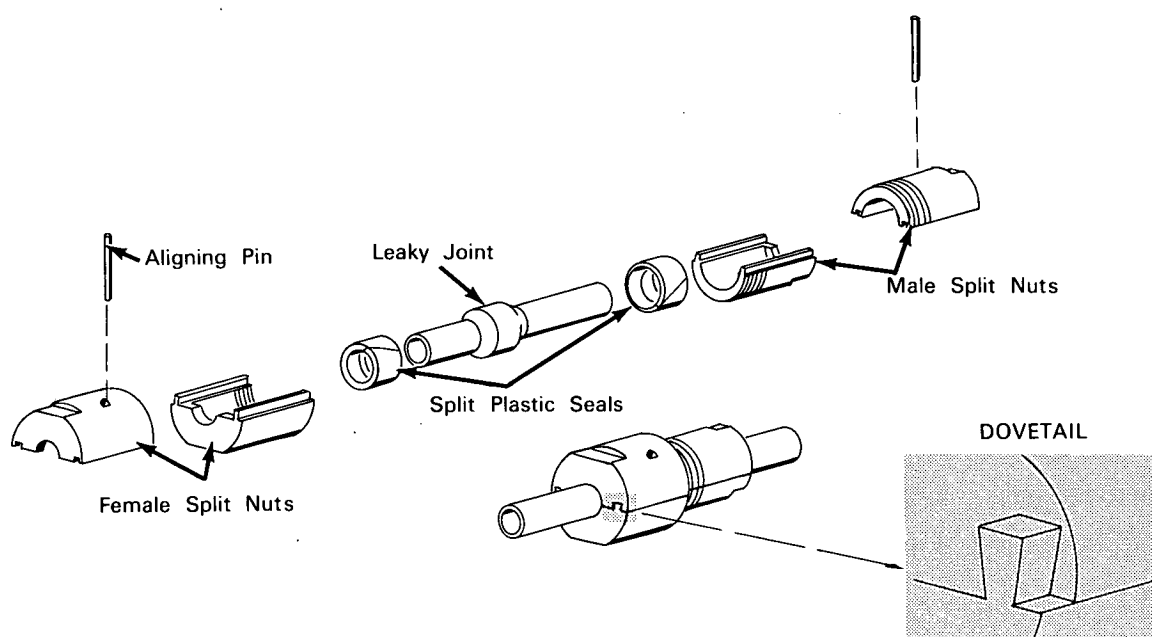


NASA TECH BRIEF



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Tube Joint Leak Repair Coupling



Prior methods of repairing leaking tube joints involved replacement of the soldered joint. This entailed removal of the union by debrazing or by machining and necessitated system flushing, purging, and recharging.

A technique has been conceived that accomplishes an effective repair to a leaking joint and requires none of the tasks mentioned above. The device consists of 2 split seals, 1 male split nut, 1 female split nut, and two aligning pins. Each split nut consists of 2 half-shell sections which, when engaged, are held together by a dovetail joint and an aligning pin. In application, the male split nut is inserted into the female split nut and retained by standard threads. The two

split nuts are torqued together, thus compressing the two split seals about the union and completely encapsulating the joint. This eliminates union leakage and prevents tubes from creeping out of the fitting due to shock or vibration.

Notes:

1. Hydrostatic leak testing with the split nuts set at 50 inch pounds torque resulted in no leakage under system pressures from 30 to 300 psi. Failure did not occur until 350 psi was reached. The same hardware was reassembled and the assembly torqued to 100 inch pounds. Testing was started at 300 psi and raised in 100 psi increments to 1150 psi, at which point failure occurred.

(continued overleaf)

2. Documentation for the innovation is available from:

Clearinghouse for Federal Scientific
and Technical Information
Springfield, Virginia 22151
Price \$3.00
Reference: B68-10540

Patent status:

No patent action is contemplated by NASA.

Source: William B. Ferguson
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