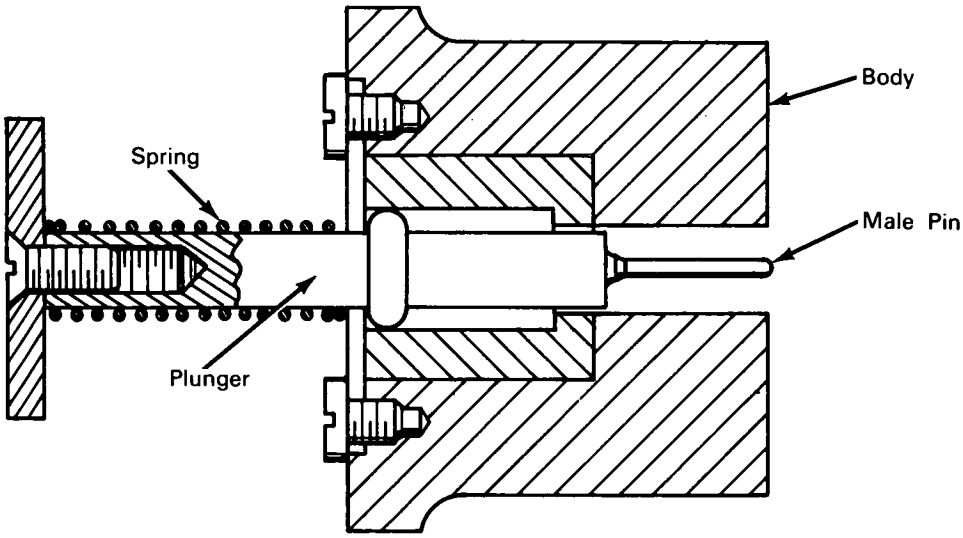
NASA TECH BRIEF

Gage Measures Electrical Connector-Pin Retention Force



The problem: To have good electrical contact, a female subminiature D connector pin should exert a retention force of from one to eight ounces. Conventional force-indicating gages are expensive and require much time to read or record their outputs.

The solution: A simple mechanical gage that measures the female connector-pin retention force in a go-no-go procedure by observing the action of a calibrated spring.

How it's done: The gage consists basically of a housing, plunger, and tension spring. The plunger terminates in a male subminiature D connector pin, and its forward movement is resisted by a tension spring that can be readily changed to one of less or more tension by removal of the plunger handle.

In operation the plunger handle is depressed until the spring is fully depressed and further travel is not possible. The male pin is then inserted in the female pin and the inserting force removed. If the plunger pops back to its original position, withdrawing the male pin, the retention force of the female pin is less than the force exerted by the tension spring. Selection of the tension spring may be varied as desired to assure good electrical contact over a wide range of environmental conditions.

Notes:

1. After selection and installation of the tension spring, it is possible to check a great many female pins in a short time using this simple yes/no procedure.
2. Inquiries concerning this innovation may be directed to:

   Technology Utilization Officer
   Jet Propulsion Laboratory
   4800 Oak Grove Drive
   Pasadena, California, 91103
   Reference: B65-10034

(continued overleaf)

Patent status: NASA encourages commercial use of this innovation. No patent action is contemplated.

Source: Radio Corporation of America under contract to Jet Propulsion Laboratory (JPL-SC-071)