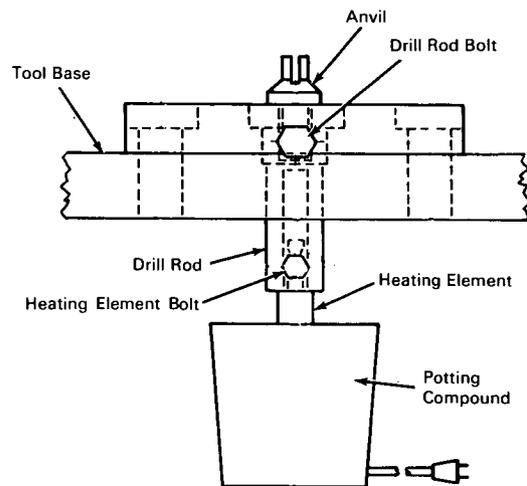
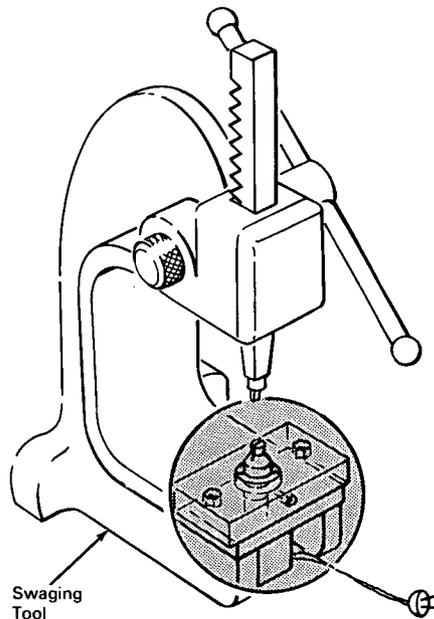


# NASA TECH BRIEF



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## Low Power Heating Element Provides Thermal Control During Swaging Operations



### The problem:

To supply heat to materials during swaging operations. Cold swaging of electrical terminals often results in cracking.

### The solution:

The use of a low power, cylindrical heating element in a swaging anvil assembly to heat the material being worked on. The increased ductility of heated material results in crack-free deformation.

### How it's done:

A standard swaging tool is modified by attachment of a heating device in its base. The heating device keeps the swaging anvil in intimate contact with a drill rod that holds a low power heating element. The heating element portion below the drill rod is encased in potting compound.

Power supplied to the heating element by a regulated source causes heat from the element to be conducted to the anvil through the drill rod. Items being swaged are thus heated by the anvil.

### Notes:

1. This heating technique eliminates cracking of electric terminals being swaged, saves time, and enables the terminals to be installed correctly.
2. The heater from a soldering iron may be used as the heating element.
3. Inquiries concerning this invention may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama, 35812  
Reference: B66-10206

(continued overleaf)

**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: James W. Crowell  
of Chrysler Corporation, Space Division  
under contract to  
Marshall Space Flight Center  
(M-FS-457)