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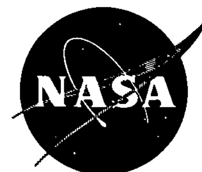
# NASA TECH BRIEF



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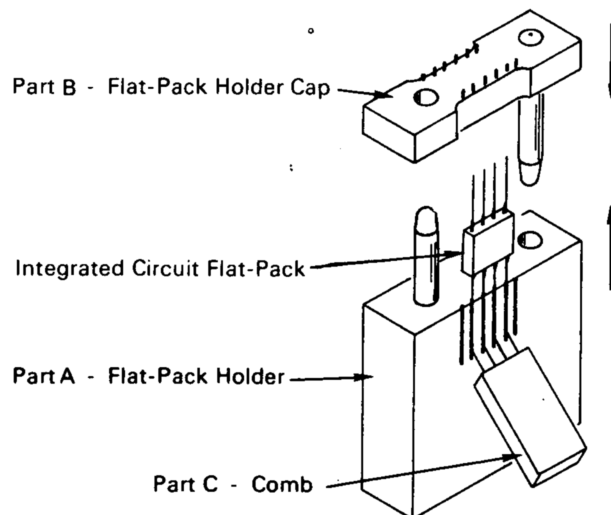
## Integrated Circuit Flat-Pack Lead Bender

### The problem:

To provide a means of bending integrated circuit flat-pack leads quickly and accurately for mounting on printed circuit boards so as to achieve high density packaging with minimum damage to the flat-packs. The present method requires manual bending of the leads to precise angles for fitting into mounting holes in printed circuit boards. The process is very time consuming and damage to the flat-pack frequently occurs.




Integrated Circuit Flat-Pack Lead Bender

### The solution:

A device (see fig.) in which an integrated circuit flat-pack can be mounted and held firmly while the leads are bent accurately, and without damage, to the necessary precise angles.

### How it's done:

The integrated circuit flat-pack is placed on the flat-pack holder (Part A), and the leads are aligned in the grooves of the holder. The pins of the flat-pack holder cap (Part B) are aligned with the holder and the two parts are brought together to hold the integrated circuit flat-pack firmly in place. The leads of the integrated circuit flat-pack, which are sticking out at right angles from the holder, are initially bent down into the flat-pack holder grooves (Part A) using one's finger. The final bending is done by inserting the lugs of the comb (Part C) into the flat-pack holder grooves and combing downward over the flat-pack leads, thus making the precise required bend. The same procedure is then repeated on the opposite set of flat-pack leads.

### Notes:

1. The present tool is produced with grooves and bend-angles aligned for particular circuit board applications. Different board mounting-hole configurations require matching lead-bender grooves.
2. Requests for further information may be directed to:
   Technology Utilization Officer
   Manned Spacecraft Center, Code BM7
   Houston, Texas 77058
   Reference: TSP70-10117

### Patent status:

No patent action is contemplated by NASA.

Source: C. H. Koster of
Lockheed Electronics Company
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Category 01

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