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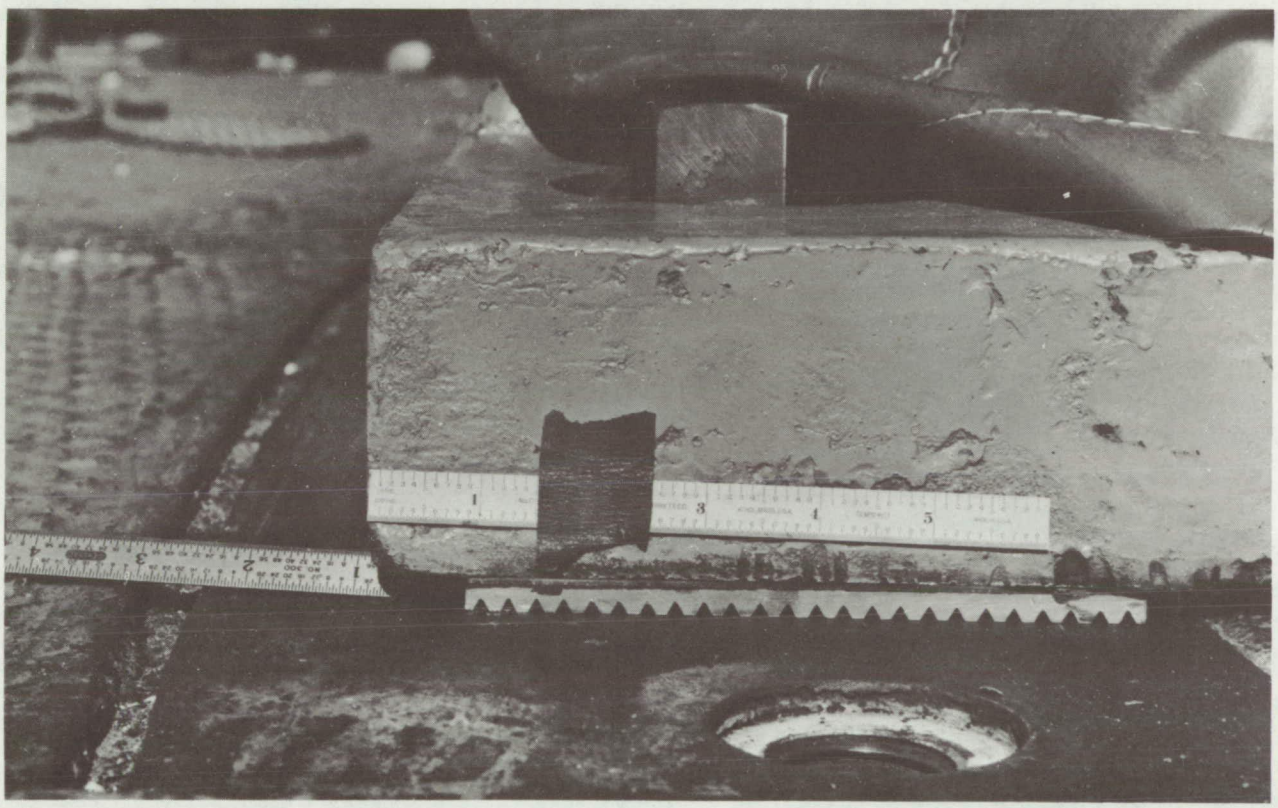
NASA TECH BRIEF

Self-Forming Shim or Gasket for Mounting Heavy Equipment



Soft, cross-serrated aluminum shims may be employed as mating gaskets between uneven surfaces. Under pressure, the aluminum will flow to conform with surface irregularities, forming a plane of virtually uniform bearing. This technique can be used to mount a large object on a rough surface, such as machinery on a concrete floor. Current shims and gaskets must deform along a plane surface, which is at best an imperfect process.

In one case where this technique has been applied (see illustration), a shim was required to fit two large flat surfaces, the irregularities of which caused gaps of up to 1/16 in. A shim to fit the bearing area was cut from 1/4-in. 1100-0 (annealed) aluminum plate. "V" serrations were cut, running lengthwise, on the underside only. The flow of shim metal into the imperfections caused a uniform bearing area to be formed, permitting the use of high-tensile strength bolts to

(continued overleaf)

connect brittle material. Neither corrosion between steel and aluminum nor creep was found to be a problem in this application. Inexpensive aluminum shims were found to be easily replaceable, and facilitated inspection.

This innovation should interest manufacturers and users of heavy cutting, forming, and processing equipment which must be mounted on relatively uneven surfaces. The expenditure of large amounts of money to smooth cement floors in factories can be eliminated because the shim offers perfect surface-to-surface contact between the floor and the material.

Note:

No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer
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Patent status:

No patent action is contemplated by NASA.

Source: George W. Walter
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(KSC-10504)