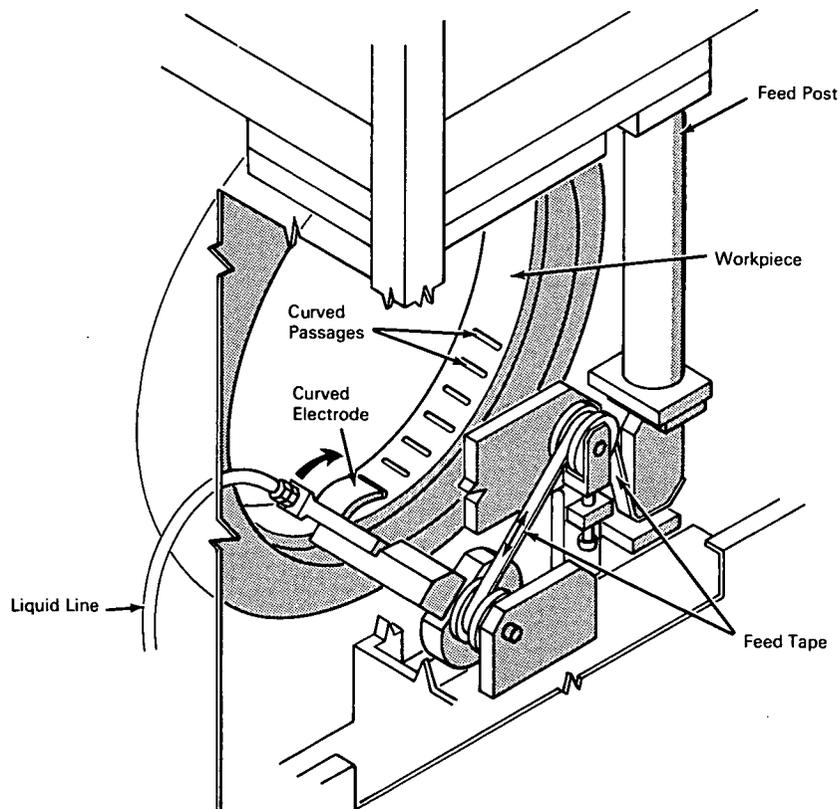


NASA TECH BRIEF



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Internal Machining Accomplished at Constant Radii



The problem:

Fluid passages must frequently be drilled at right angles to intersect at some predetermined point in the body of a workpiece. The angle of intersection plus any mismatch of the two drilled passages cause cavitation in the fluid being forced through.

The solution:

A device that machines fluid passages in workpieces at constant radii through two adjacent surfaces that

are at included angles up to approximately 120 degrees.

How it's done:

An electrode tool consisting of a hollow tube is made to the desired shape and radius and mounted on a pivot arm. The pivot arm is driven by a feed tape in such a manner that the curved electrode enters the workpiece and machines the desired passage to the electrode radius. Either electrochemical machining

(continued overleaf)

using saline solution, or electrical discharge machining using oil may be employed, the liquid used being fed to the hollow electrode through conventional piping.

Notes:

1. This technique has been used extensively in fabricating engine parts where close control of fluid flow is a requirement.
2. Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B66-10546

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: T. E. Gollighugh
of North American Aviation, Inc.
under contract to
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