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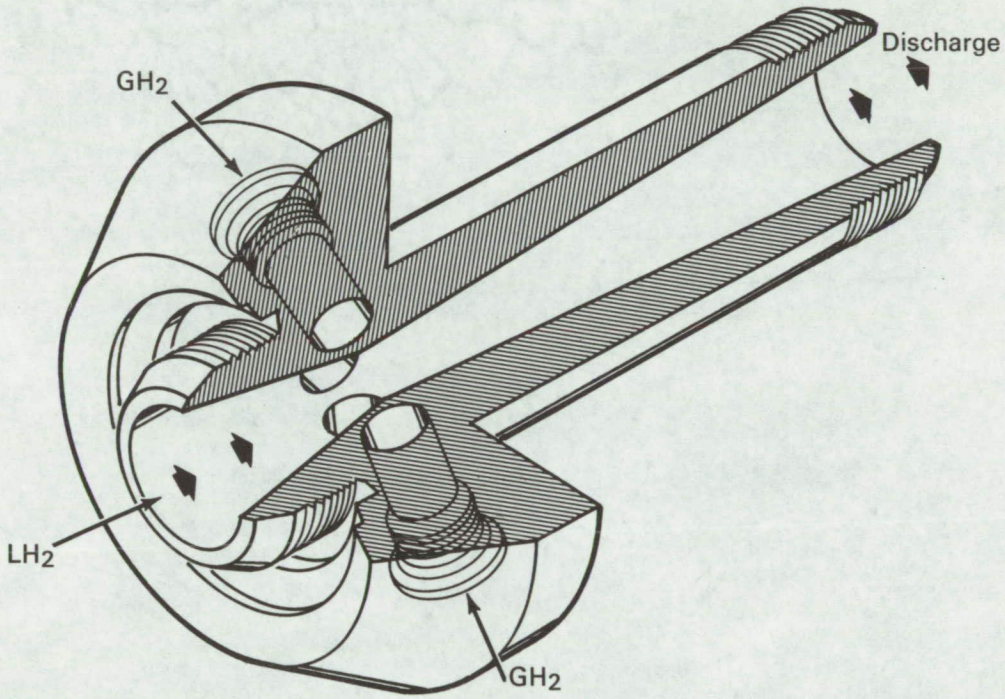
NASA TECH BRIEF

Mixer Conditions Temperature of Liquified Gas Streams



The problem:

To deliver a two-phase liquid hydrogen stream with the average temperature controlled at various levels between 100° and 200° R.

The solution:

A mixing venturi installed in the delivery line and supplied with a controlled amount of hydrogen gas at room temperature.

How it's done:

Liquified hydrogen flows into the axial entrance to the venturi and the room temperature gaseous hydrogen is introduced through the four radial ports in the throat area. Mixing takes place in the recovery (diverging) section and a consistent two-phase mixture at a stable temperature is discharged.

Notes:

1. This technique should be useful in laboratory testing where presently, temperature control is maintained by a calibrated heat leak that results in considerable expenditure of cryogenic refrigerants.
2. Inquiries concerning this invention may be made to:

   Technology Utilization Officer
   Marshall Space Flight Center
   Huntsville, Alabama 35812
   Reference: B66-10565

(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: E. Talmor
of North American Aviation, Inc.
under contract to
Marshall Space Flight Center
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