

H. J. Hall

Reprinted from THE REVIEW OF SCIENTIFIC INSTRUMENTS,
Vol. 26, No. 7, 731, July, 1955
Printed in U. S. A.

High-Pressure Leak Detector*

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(Received May 12, 1955)

ONE of the most time-consuming problems in the operation of high-pressure equipment is the detection and location of small leaks. Fluorescent dyes and similar materials have been tried without a great deal of success. We would like to report briefly on a leak detector normally employed for vacuum systems and refrigeration equipment that can be used in high-pressure work. This is the General Electric Type H leak detector. This leak detector has a heated platinum emitter arranged as part of a sensitive electronic circuit. Modifications of the emission characteristics by exceedingly small amounts of halide in the air drawn over the platinum surface are directly indicated. The sensing element as supplied in commercially available instruments is housed in a convenient gun form so that the element can be used to explore the air near small areas of seals, joints, and so on.

For high-pressure use, a small amount of chloroform, methyl chloride, or other volatile halide compound is mixed with the pressure-transmitting fluid during assembly of the system. The small amount necessary does not affect the freezing properties of the fluid. If a leak is suspected, it is merely necessary to explore the most likely places with the gun tip. Leaks at packings so small as to be unnoticeable with a manganin wire gauge over a period of hours are easily found and pinpointed with this technique.

*The research in this document was supported jointly by the Army, Navy, and Air Force under contract with the Massachusetts Institute of Technology.