

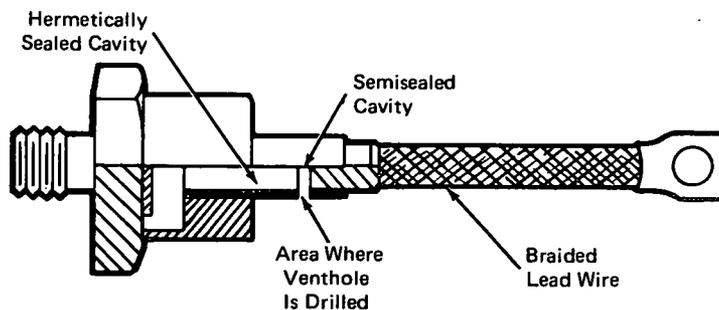
NASA TECH BRIEF

Marshall Space Flight Center



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SRC Seal Testing



Fully Assembled SCR

The problem:

Fine leak testing of hermetic seals in fully assembled silicon-controlled rectifiers (SCR's) is inaccurate. The reason is that fully assembled SCR's have two cavities. One cavity is hermetically sealed, whereas the second cavity that encloses a braided lead wire is semisealed. Helium is frequently entrapped in the semisealed cavity; and, when the device is tested, it indicates a high background leak. Based on this leakage, SCR's with good hermetic seals are frequently rejected.

The solution:

A small venthole drilled in the semisealed SCR cavity eliminates the entrapped helium.

How it's done:

Helium is entrapped when the braided lead wire is installed into the SCR device to form a semisealed cavity (see figure). When the device is tested, some of this helium will be released, showing high leakage. Since the device is fully assembled before the test, a small hole must be drilled into the semisealed cavity to release the entrapped gas. Although these devices show a slightly greater leak than those before the lead installation, it is now possible to distinguish the device with a good hermetic seal from the defective one.

Note:

Requests for further information may be directed to:

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Patent status:

Inquiries concerning rights for the commercial use of this invention should be addressed to:

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