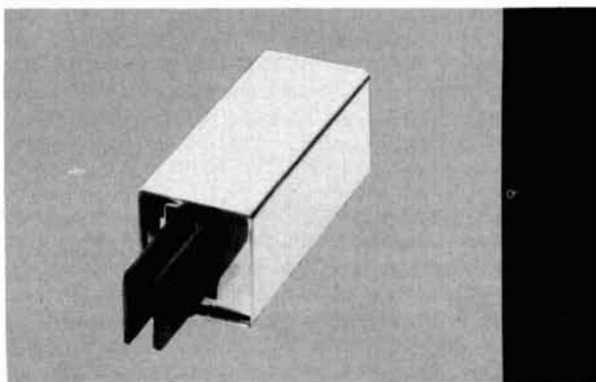




the james research permaflex key

A new design
for
solid-state
keyers

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A number of different keys have been introduced and manufactured over the years, and each new design borrows a little something from previous units. First came the hand key, then the bug and the cootie key (or was it the other way around), and finally, adaptations of the basic bug for use with electronic keyers. The new James Research Permaflex key represents a radical departure in key design. It doesn't even look like a key in its handsome chrome-plated case. The function is still the same, but modern materials, design and technology are used to manufacture a key to meet the needs of today's solid-state electronic keyers.

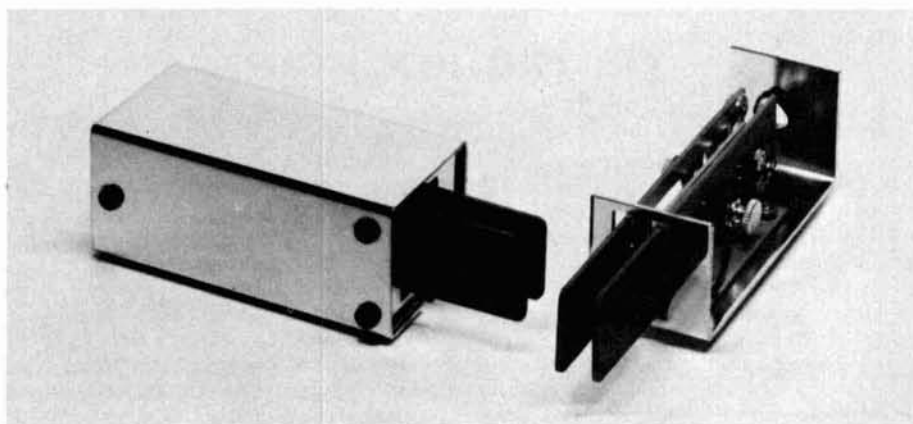
If you have ever used a conventional bug with a solid-state keyer, particularly integrated-circuit units, you can appreciate the problems caused by corroded silver keying contacts. Problems don't show up with vacuum-tube keyers because there's enough current drawn through the contacts to keep them clean. However, with solid-state devices, it's a completely different story. The current through the contacts is infinitesimal, and if you don't clean the keying contacts fairly often you'll be plagued with erratic

keying. I've tried a number of solid-state keyers, but problems with erratic keying had always forced my back to the 'old reliable' vacuum-tube unit. I wonder how many other amateurs have had the same problem?

Another problem with conventional keys is contact bounce. Transistor and integrated-circuit keyers are a lot faster than most vacuum tube units; if your key has any contact bounce (and most of them do), you'll experience further trouble with badly made CW characters. Any corrosion that the contacts may pick up further aggravates this problem. If you have any doubts about contact bounce, just run a little dc through your keying contacts and take a look at the waveform on an oscilloscope. You'll be amazed at the 'fuzzy'

any contact bounce at all. This shows up when using solid-state keyers too. With a conventional key, I was plagued by extraneous dots when the paddle was pushed to the dash side. With the Permaflex any keying errors I get are completely my own.

The Permaflex key is small—only 1-9/16-inches square by 3-3/4-inches long—but the silicone rubber feet do a remarkable job of preventing key "walking" during operation—as long as you keep them clean. Actually, there are two sets of feet on the key—one set is used when the key is operated as a sideswiper, the other set when it's used as a hand key. This is one of the more interesting applications of the Permaflex key; if you're working a station where a hand key would



leading edges caused by bounce.

The James Research Company took a very close look at these problems, and then designed a unit that would solve them. For the corrosion problem, they used gold-diffused silver; the contacts will take up to 8 amperes and will not corrode. The pivotless two-paddle design using fiberglass epoxy with gold-plated conductors results in a low-mass paddle with equal performance at both low and high currents. Tension can be adjusted from 5 to 50 grams. None of the adjusting screws carries any current, so there are no problems with high-resistance paths.

Contact bounce with the Permaflex key is practically non-existent. In oscilloscope tests that I've made, I've been unable to detect

be more suitable than an electronic bug, you simply turn the key on its side and use it as a hand key! Three additional silicone-rubber feet are provided for this purpose.

The biggest problem with the Permaflex key is getting used to it. After using a regular "bug" for a number of years, it's difficult to adapt to a keyer that has 5 grams armature pressure. If you operate an electronic key, you probably bat the keyer around a lot—I know I do. Keying with the Permaflex doesn't take any effort at all, so it takes a little getting used to. But after you've mastered it, it's pretty hard to go back to the high-mass paddles used in conventional designs.

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