



Hybrid Package Cover Remover

- Innovative cover remover makes smooth, repeatable cuts on flat, plug-in, or platform packages
- 280-tooth carbide cutter delivers a longer service life and produces a smoother cutting surface than blades with fewer teeth
- Allows rewelding of a new package cover without the need for costly resurfacing
- Tested and approved in accordance with MIL STD 883, M38510
- Separate single-operation, externally accessible controls permit fast, easy adjustment of width and depth of cut, as well as length of travel, for packages up to 5" x 5"
- Circular "table-saw" design and preset feed rate and clamp pressure allow easy package loading—without cumbersome screw settings
- Self-contained, muffled vacuum system picks up residue surrounding saw blade for cleanroom operation
- Vertically adjustable package stop allows several different package types to be cut

The Cutting Edge of the Hybrid Revolution

Because sophisticated hybrid packages represent such an enormous investment, no one wants to throw them away. Until recently, however, manufacturers have either had to scrap defective packages, and absorb a loss that can easily run into the thousands, or to perform repackaging that involves expensive substrate removal and remounting and can damage exposed internal circuitry.

This is the package opener that revolutionized hybrid reworking by offering a third alternative. It performs safe, effective package cover removal and allows subsequent resealing—without any additional surface refinishing, disruption of production schedules, or modification to your resealing equipment.

In fact, this machine helped bring about the modification of military standards to permit package opening and resealing. When it appeared on the market, manufacturers were not permitted to use a hybrid package once it had been reopened. As a result of its demonstrated

reliability and its repeatable results, military standards were modified in 1985 to allow resealing of packages opened with this machine. As a result, companies that saved old hybrid packages were able to rework them at a tiny fraction of the cost of producing new ones!

Unique "Table-saw" Design Combines Precision, Simplicity, Durability

The hundreds of these machines that have been placed in service worldwide since 1979 attest to their effectiveness, reliability and versatility.

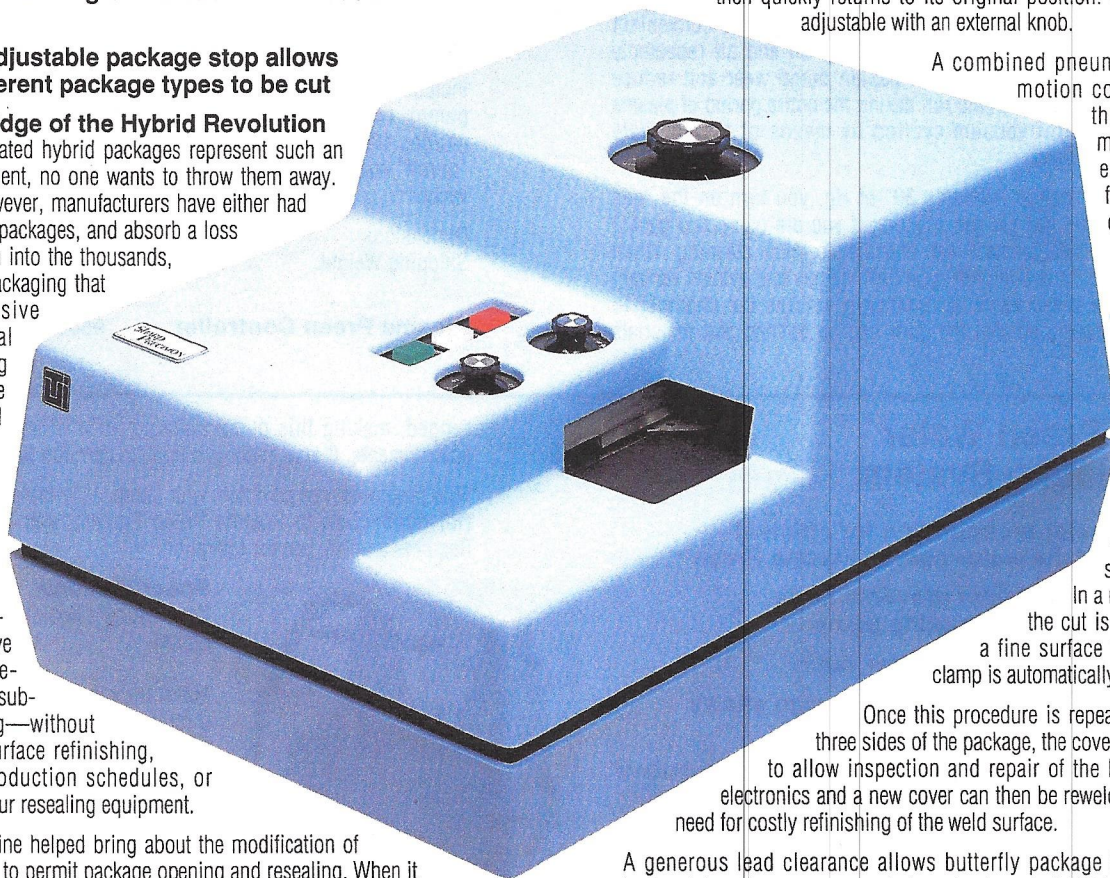
The cutting edge of this system is a circular carbide blade mounted safely beneath the machine's slide table. Separate controls enable you to adjust the depth of the cut to match the cover thickness, and the width of the cut to be wider than the seam weld but not as wide as the package wall. Because these dial controls are externally accessible, the machine's cover can remain closed during loading and operation. That means that package covers can be removed quickly and easily—even by inexperienced operators.

To remove a package cover, you simply place the package on the table with the welded seam down and then press the "Start" button. A clamp is automatically activated that holds the package down by applying a safe, repeatable, uniform pressure over the entire package. The table then slowly moves the unit across the cutter at the optimal rate for cutting the lid, and then quickly returns to its original position. Clamp height is adjustable with an external knob.

A combined pneumatic/hydraulic motion control provides the smooth table movement necessary for uniform, smooth, cuts (the system uses compressed air or nitrogen—no hydraulic connection is required). And because the cutter operates at only 75 RPM, it generates no heat that could affect sensitive packages. In a matter of seconds the cut is complete—with a fine surface finish—and the clamp is automatically released.

Once this procedure is repeated on the other three sides of the package, the cover can be removed to allow inspection and repair of the hybrid's internal electronics and a new cover can then be rewelded—without the need for costly refinishing of the weld surface.

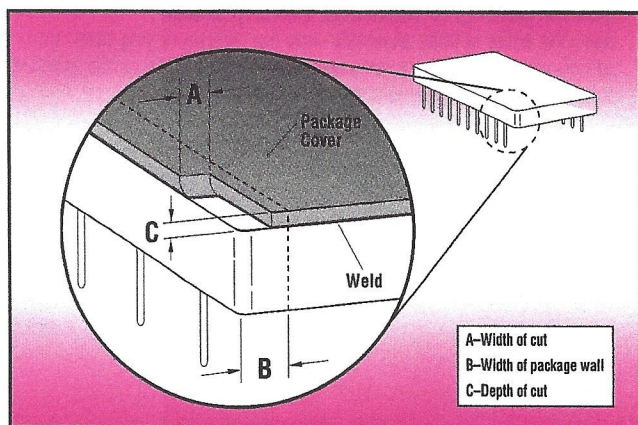
A generous lead clearance allows butterfly package leads and other horizontal package components to extend up to 2 1/2" beyond the cover perimeter.





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SMT/MICROELECTRONICS PROCESSING



Machine cuts weld without exposing package interior.

Safe, Easy to Maintain

The life of a cutting blade is proportional to the number of its teeth. This 280-tooth solid carbide cutter provides a much longer service life than other cutters that rely on far fewer cutting teeth (and require higher RPM operation)—it will typically remove covers from 1,000 packages, and it can be easily removed for sharpening or replacement by means of four screws. No tools or special procedures are required because the blade remains mounted to the spindle assembly. Its precision spindle needle bearings ensure uniform, repeatable results. The blade is inaccessible during operation, so fingers remain out of harm's way.

All components are positioned on top of the main base plate and are easily accessible under a hinged cover. A safety switch guarantees that the unit will not operate as long as this cover remains open. An internal pressure regulator and filter keep pressure within design limits. A solenoid shuts off the input air or nitrogen when the machine power button is off.

Both the depth and width of the cut, as well as the length of table travel, are easily controlled by top-positioned, anti-backlash rotary knobs, which are accessible through the hinged cover.

Clean, Quiet Performance

This package opener incorporates its own self-contained, muffled vacuum system to extend service life and ensure clean, quiet operation. A high-suction vacuum pickup runs from the vacuum motor to surround the cutter blade, removing particles generated during operation.

This feature provides several important advantages. Because particles are gathered before they can disperse onto the staging area, the mounting table remains clean and smooth. That means you'll never have to worry about metal shavings interfering with the proper alignment of a package; it also means that particles stay out of the machine's internal components and out of your cleanroom. And because the cuts typically do not extend beyond the package wall, particles cannot enter the hybrid, either.

Tried and True

The Hybrid Package Cover Remover has been extensively tested according to military specification M38510 and MIL STD 883 Test sequences. These tests, based on Army and Navy recommendations, included separate tests for stabilization bake, moisture and corrosion resistance, electrical integrity, fine and gross leaks, thermal and mechanical shock, and particle impact noise detection (PIND).

Compared against control packages, hybrids that had been opened by this machine and then resealed demonstrated a 94% success rate on the PIND test and a 100% success rate in all other tests.

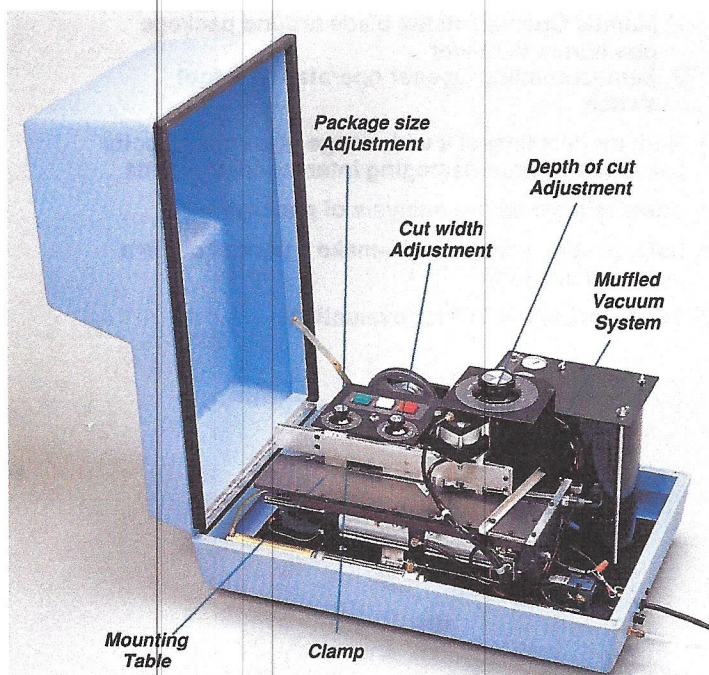
Versatile Applications

These features add up to a machine flexible enough for failure analysis and repair of costly hybrid packages during R&D work, and its cutting rate and uniformity make it ideal for large-volume production. Up to 80 packages per hour, 1" x 1", may be cut.

Optional adapter plates allow it to accommodate a wide range of plug-in packages.

Specifications

Package Size Range:	Up to 3" x 3", .080 to .562" thick (No. 2701-21) Up to 5" x 5", .080 to 1.000" thick (No. 2701-22)
Cut Depth:	0-.020"
Cut Width:	0-.055"
Horizontal Lead Length:	2 1/2" maximum
Cutting Rate:	80 1" x 1" packages per hour
Dimensions:	27"D x 19"W x 16"H
Weight:	85 lbs.
Electric:	115VAC, 60Hz, 10 amps
Gas:	Clean air or nitrogen, 1.9 cubic feet/hour max., 85 to 110 psi



Cover swings open for easy access to internal parts.

Hybrid Package Cover Remover

Tooled for flat and platform packages up to 3" x 3" (requires crating)

Cat. # 2701-21 \$/Each Discontinued

Hybrid Package Cover Remover

Tooled for flat and platform packages up to 5" x 5" (requires crating)

2701-22 17,975.00

Adapter for Platform (Coined-Edge) Covers

Required for use on platform packages to enable covers to be removed without damage to weld ring.

2701-30 1,500.00

See next page for adapters and other accessories.



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